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dealing with Race and Inheritance in the Fields of

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DEMOGRAPHY AND ANTHROPO-GEOGRAPHY

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VOL. I, NO. 1 THE JULY 1960

MANKIND

QUARTERLY

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This is the more necessary in our own times as many serious students and research workers in the manifold fields of investigation in this group of studies have become increasingly disturbed by what is, consciously or unconsciously, too often the partial presentation of facts and, in many cases, the completely improper conclusions which are drawn from such facts as are from time to time so presented.

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EDITORIAL

In introducing this new journal in the field of study of the races of mankind we feel confident that we are meeting a need which has existed for some time, and that as a consequence we shall have the full support of libraries, research workers and students of the subjects involved, and also of that considerable body of readers who, while not being specialists themselves, have more than a passing interest in the racial history of mankind.

This journal has become the more necessary since during the last two decades there has been a decided tendency to neglect the racial aspects of man's inheritance for the social. As a consequence anthropological studies in many quarters have ceased to be comprehensive. They are all too often not governed by the scientific discipline of the fields of study with which we are in this journal concerned. Thus they have become little more than sociological with a strong leaning towards discarding heredity as a valid criterion in the study of man. This they have replaced by what is called "social heredity" and, indeed, by conceptions which in some degree or another approach towards a quite untenable neo-Lamarckism. The danger of these developments is that they are largely subjective, both in the researches they initiate and particularly in the conclusions they draw from such studies. Consequently they are unduly influenced by political and ethical conceptions current in many circles today. It is our belief that by once more emphasising the physical aspects of mankind, and bringing these studies back to the nature of man, that we are not merely continuing the scientific development and exposition of anthropological and related studies as they have been understood heretofore, but that we are helping to correct a serious unbalance which has taken place in recent years.

In order that we may have the opportunity of presenting to you objective studies and their interpretations in these fields we solicit your support for this journal. Judging by the welcome it has received from so many distinguished scientists in all parts of the world, some of whom are on our honorary advisory board, we feel that your support is assured.

THE EDITOR

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World Population

PART I

By SIR CHARLES DARWIN

It seems likely that we shall soon have to make a real revolution in our judgments of what is good for the human race. This is because of the extraordinarily rapid increase in our numbers, through which at some time in the future, and that not very far off, the resources of the world are going to be taxed merely in order to keep us all alive. This will bring about a complete reversal of the traditional judgments we were apt to make in the past. Thus in describing some past period, historians very naturally called it a bad period if there were famines or plagues or massacres, that is to say if a lot of people died who need not have died. Put very crudely, a period was good if population numbers increased, and bad if they were prevented from doing so. This is of course a great over-simplification, but if, as seems likely in the future, the sufferings of humanity will be principally due to there being too many of them, our judgment must be revised, and we shall welcome decreases in our numbers. Presumably this does not mean that we shall welcome famines and plagues and massacres, but it does mean that we ought to be giving intense thought to the whole subject of population increase. Can we invent some humane way of avoiding these threatened conditions? As will appear, the time is not long—less than say four generations—before the need to do so will be urgent.

The present rapid increase of our numbers, and the accelerated rate at which they are increasing, constitutes terrible threats against the continuing prosperity of our present ways of life. More and more people are now becoming conscious of these threats, but there has been a tendency in some quarters to belittle them, whether for doctrinal reasons, or from a spirit of uncritical and unthinking optimism. It may be well then to attempt to set out the facts of the situation as it stands now, together with a forecast about the way things are almost certain to go in the next fifty years or so. From these considerations there will then arise the question of what action we could take so as to avoid the threats in the remoter future, now that we can foresee some of them. As will appear, the results are not in the least reassuring.

Some writers have described the present increases in our numbers as an explosion, and it is a good name provided that

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we alter our time scale from seconds to centuries. Thus in the ordinary sense an explosion means an enormously rapid expansion which is all over in a couple of seconds, whereas our present increases have been already going on for about two centuries, and they still show no signs of stopping, but rather they are increasing in their pace. Most of us are quite unconscious of all this because we have never seen anything different, nor did our fathers or our grandfathers, or any of our ancestors back for five or six generations. It is evident that the increase has got to stop some day and the question is how and when. Mere arithmetic shows the necessity of considering this, for it is easy to calculate that if the present rates of increase went on for less than a thousand years, which is not a long time as history goes, there would be just about standing room for us on the land surfaces of the earth, and obviously long before this the increases must cease. Thus the time when the explosion will simply have to stop is not really very far off. The consideration of the subject is urgent, and it must not be regarded as a remote and vague speculation into a future so distant that we need feel little interest in it.

Past and Present

The numbers of mankind in the distant past are of course not known with any accuracy, but they must have gone something like this. Leaving aside such very remote discoveries as the use of fire and of flint implements, our numbers have been enormously changed by three great revolutions in man's way of life. The first was the invention of agriculture, when man ceased to be a food gatherer, and became a cultivator. This was round about 10,000 B.C., and as the practice spread, the numbers increased from something like ten million to perhaps fifty million. The second revolution, sometimes called the urban revolution, came about 3000 B.C., when man found a second improvement in his way of living by the invention of city life, which permitted the division of labour, and the development of trade. Once again he responded by gradually increasing in numbers so that by A.D. 1 his numbers for the whole world became something like two or three hundred million. Authorities differ to some extent about which of these two values they take, but the difference is really not at all important in forming a general picture of world history. After this we come of course to the historical periods about which our knowedge is a good deal more accurate. The numbers fluctuated a good deal, but slowly increased, as the urban way of life spread to new parts of the world, but even by A.D. 1750 there were not more than 500 million people. Then something quite new

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happened and now, only two centuries later, there are well over 2700 million people.

It had taken nearly two thousand years for mankind to double his numbers, but he now multiplied them by five in two hundred years. This was the third great revolution, and it may be called the scientific revolution. By the study of the laws of nature, a study which began to develop in the 1600's, man gradually acquired a mastery of nature to a degree so much greater than he had ever had before, that it entirely transformed his ways of life, and he responded, just as he had in the earlier revolutions, by vastly increasing in numbers. Whereas the earlier revolutions started in Asia and the eastern Mediterranean, and took thousands of years to spread, the new one, starting predominatingly in western Europe, has only taken these two centuries entirely to dominate the world.

It has already revolutionised the life of most countries in ways that everyone knows. From the practical point of view I suppose one of its most outstanding features has been the development of all our methods of transportation, which have made it so easy for people to move out of the crowded parts of the world into regions where there was spare space. Furthermore, in the old days when there was a famine anywhere the people there simply had to die, but now the famine can be relieved from other countries where there happens to be plenty.

Another main development has been due to the discoveries in medical science, which have enormously lengthened the average expectation of human life. In the old days the expectation of life for a child at birth was very small on account of the terrible infantile mortality which used to be universal, but now those days are over for many countries, so that a new-born child may look forward to a good many years of life. The same is true for older people too, and anybody can now have a fair expectation of living till say seventy. Moreover, this expectation is increasing all the time, so that the average age of mankind is increasing year by year. This increase of course contributes to the rate at which our total numbers are growing, but it must not be thought that it is the main cause of it for even without it our numbers would be increasing quite terrifyingly fast. It is going of course to give rise to many social difficulties, such as our having to support a lot of pensioners who are past work, and this will make problems, but that is not what concerns us here.

It is interesting to consider how the present increases are spread over the world. There is of course great variation. We are all familiar with the case of India, which has five million extra mouths to feed every year, and Japan which, do what it may, can hardly

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avoid having a hundred million people within the next twenty years. With the exception of one or two countries western Europe is not increasing very fast, though in no country are the numbers actually diminishing. One of the most rapidly increasing countries in the world is the United States. They are increasing at a rate a good deal greater than India, and the increases are affecting all levels of society.

This is a most important, and rather unexpected fact. As short a time as ten years ago, many peope believed that it was mainly the under-developed countries that were increasing, and that the increases would slow down and stop as soon as these countries reached a pitch of prosperity like that of Europe. Their cure for the danger of over-population then was to improve the conditions in these countries one by one up to the European level until finally the world had a constant population lapped in a millenium of comfortable luxury. Unfortunately for this argument we are now seeing that the country which is indisputably the most prosperous in the world is one of those that is multiplying most rapidly. Evidently prosperity will not stop the increases.

The Next Fifty Years

In order to see the way things may be expected to go in the future, we must act like the forecaster of the weather. He takes into account all the information available about present conditions, and then he forecasts what the weather will be like twenty-four or forty-eight hours hence. He is not of course always right, and most of us are specially tempted to recall his failures, but in fact he is usually right four times out of five, and surely that is a useful forecast to have.

The forecast I shall attempt here is for the next fifty years, and the information for it is furnished by the demographers. These are the people who are experts on censuses and such matters. I shall begin by considering how many people there are expected to be, and later I shall examine what sort of a life they may hope to live, which will call for a consideration of agriculture, and the other necessities of life.

Numbers

The demographers say that when the present trends in numbers are considered, it becomes almost certain that fifty years hence our numbers will have doubled from what they are now. Our crowded world of 2700 million will have become a much more crowded world of over 5000 million. These large numbers are hard to grasp, and smaller ones may be more convenient to think about. At the present time at the end of each

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year there are 40 million more human beings than there were at its start. Moreover, there is every expectation that this number will itself be growing in each successive year, just as it has done in every year during the past fifty years. Even this figure of 40 million is rather large to think about, and the same fact is expressed by saying that in every twenty-four hours, year in year out, there are well over a hundred thousand more people alive at its end than at the beginning; this is the difference between the number of births and the number of deaths during the day. It should be added that this figure of 100,000 is a very cautious estimate, for some of the experts place the figure as high as 140,000, but there is no need to be as precise as this in order to see the general prospects.

In dealing with such very large numbers it is natural at first sight to think that the larger they are the more unreliable the results will be, but the reader may be reminded that that is not usually the way with statistics. Materially to alter the very large number there has to be a very important cause, and it is unlikely that such a cause will be overlooked in the way its effect might be if the total number were smaller. This point can be illustrated by the consideration of some of the possible catastrophes which may be thought likely to upset the prediction.

Thus in the past there have been disastrous famines every few years in some part or other of the world. I think we should agree that it was a very serious famine indeed that would have killed ten million people, and that this sort of thing has only happened rather rarely. Yet that number would be replaced in three months. Anyone who thinks that famines might stop the present increases in our numbers has got to believe that we shall start having four such famines somewhere in the world during every single year. This could only come about by a sudden radical change in the earth's climate. and we have no reason to expect it, and indeed the fact that the earth's climate has been roughly constant for many millions of years in the past makes it quite fantastically improbable.

For the like reason we can leave out the consideration of war, at any rate war of the old kind. Thus the First World War killed ten million men in four years. Forty years ago the annual increase was not as great as it is now, but even then that number would have been replaced in less than six months. Of course an atomic war would be very much more serious as far as we can judge, but the effects even of that would be unlikely to make much difference to the mere matter of numbers, whatever it might do through the breakdown of world economy. Thus if a hundred million were killed this would be easily the greatest disaster that

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has ever struck mankind, but the number would be made up again in less than three years. We cannot of course foresee what would be the other effects of such a calamity, but it does at least seem unlikely that the folly of the human race will go so far as to insist on having an atomic war every three years. It thus looks very improbable that any kind of war will seriously diminish our total numbers fifty years hence.

There is one other cause which it might be thought would affect the forecast more seriously, and it has the advantage of not being a catastrophe like those I have considered, but that it is essentially humane, and it is indeed one of the most hopeful prospects we have of controlling our numbers. This is the practice of birth control. It is I think by now recognised that man's instincts are too strong for it to be possible to reduce the increases by the prescription of sexual abstinence, but the developments of recent times have made this unnecessary. In many countries the practice of contraception is already wide-spread, but it must be recognised nevertheless, that it is a comparatively small fraction of the world that uses it. There are of course objections against it that have been urged on doctrinal grounds, but even apart from that it can only be a small fraction of the human race that now use the practice.

It must be recognised that it is the best and most humane hope that we have of consciously restraining our increases, but that a great deal of work is still needed on the subject. What is required is something easy to use even by the least educated, and cheap and acceptable, and in fact nothing actually as yet exists having all these qualities. It is possible that any day a good solution of the problem might be found, but even so it is hard to see how it could materially affect the numbers fifty years hence. To affect the numbers of mankind materially it would be required on a great scale, and it would take some time to set up the factories for it, but even more serious than this, there would have to be a vast educational campaign dealing with the majority of the human race —perhaps 1000 million adult human beings—if it were to have any material effect on our numbers. When we recall that the policy is vehemenly opposed in some quarters on religious grounds it seems unlikely that in the short period of fifty years any really great effect could be shown. This is not to belittle it, and it might well become more notably effective over a longer period, but it can hardly have any material influence on the forecast of the numbers of the human race fifty years hence.

We have to conclude that short of some crushing and quite unforeseeable disaster the numbers of mankind will be round about 5000 million fifty years from now.

[TO BE CONTINUED

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THE EMERGENCE OF RACIAL GENETICS

By R. RUGGLES GATES

The desirability of founding an additional scientific journal to discuss the problems of race may be questioned by some who are concerned with other aspects of anthropology. But everyone agrees that races or ethnic groups exist and that they are in fact the raw material by means of which human evolution has taken place. The increasing rate with which racial disturbances have been occurring in many parts of the world since the end of the second world war makes it abundantly clear that the subject needs discussion, even though some of these disturbances are the result of propaganda, and others of race antagonism which has old historical foundations.

A scientific approach to racial questions, free from sentiment, propaganda or bias, may lead to a more reasonable attitude to the problems which agitate considerable sections of mankind. This need for a calmer approach to problems of race on the part of civilised peoples as well as more primitive tribes makes it desirable that a journal should exist in which the problems of racial origin and racial relationships can be quietly discussed, without rancour or bigotry and with the primary aim of elucidating facts.

My own contributions to the study of race began many years ago with an interest in the racial significance of the blood groups. An expedition down the Mackenzie River in 1928, financed by the Hudson's Bay Company, had as one of its aims the blood grouping of Indian tribes and Eskimos. It also yielded a study of families derived from Eskimo x Nordic which gave striking evidence of genetic segregation in racial crossing (Gates 1929, p. 336.)[1] The factual evidence regarding human racial genetics has grown gradually since that time. My interest in this has led to travels and observations in many parts of the world. Eugen Fischer's well known study of Dutch x Hottentots came much earlier (1913).

In 1952 a study, financed by the Wenner-Gren (Viking)

[1] *Heredity in Man.* London: Constable, pp. 385.

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Foundation, was made of families in Eastern Cuba with a Negro mother and a Chinese father. As the Negro and the Mongolian race both have a flat, depressed nose, this led to a study of the origin of the high, narrow European nose. Studies were also made of the Indian remnants which still exist in Eastern Cuba. In 1953 hybridization between Negroes and American Indians was studied in Southern Mexico and the very Mongoloid Indian tribes on the coast of British Columbia were further examined, but the enigmatic result that they do not have the B blood group remains unexplained.

An invitation to visit Japan in 1954 resulted in a study of the Ainu remnant in Hokkaido, now being rapidly absorbed into the Japanese population. This Caucasoid outpost with long head, white skin, hairy body, and heavy brow ridges with sunken orbits in the male, shows similarities in the latter features to the Australian aborigines. Archaeological evidence regarding the earlier history of the Ainu is very much needed. Perhaps it might be supplied by excavations in the Amur Valley.

In 1955, many parts of Africa were traversed with my wife. Especially may be mentioned the Kalahari desert and the region around Walvis Bay where Bushmen and Hottentots, now greatly mixed in some areas, were studied and their hair forms analysed in genetical terms. A study of the Pygmies in Western Uganda, on the borders of the Ituri forest, led to definite views of their origin as an achondroplastic dwarf race from tall ancestors with mahogany (not black) skin colour (Gates 1958.)[1]

In 1958, a long-cherished desire to see the Australian aborigines eventuated in a voyage around the world in the Southern hemisphere, during which extensive travels were made on the Australian continent. The Arunta tribe and their hybridization for three generations with Whites was fully investigated at Alice Springs (Gates 1960.)[2] Other tribes and their hybrids were investigated at Darwin and elsewhere. The publication of colour photographs has added much to the value of these results. This represents the fullest genetical analysis of any racial cross which has yet been made, and the results yield a clear picture of the relations between the Australian aborigines and their Caucasoid ancestors.

This relation is a much closer one than has been previously supposed, although the Australians are geographically almost as remote from Europe as they could get. They have probably occupied the Australian continent for at least 10,000 years. In contrast to the African Negroes, where there appear to be four

[1] The African Pygmies. *Acta Genet. Med. et Gemell.* 7: 159-218.

[2] The Genetics of the Australian Aborigines. *Ibid.* 9:7-50.

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genes for skin colour, the Australian aborigines have only one main gene, and a minor one which produces brunet-European colour. The first cross (F 1) with Europeans has very light skin colour, and moreover, much of the aboriginal skin colour is the result of tanning. This is shown when they wear clothes, the covered parts of the body becoming near white.

A dwarf tribe with curly hair in Northern Queensland, near Cairns, is regarded by Tindale and Birdsell[1] as a Negrito remnant. My observations (Gates 1960)[2] strongly support this conclusion. The tribe is now partly mixed with the aborigines, but they probably represent the first inhabitants of Australia, who were driven down into Tasmania during the last phases of the ice age when the Murrayan Australians entered Australia from New Guinea through York peninsula.

New Guinea was visited with the permission of the Australian Government, which is actively engaged in pacifying the native Papuans. Their methods of introducing civilization to people who were until recently (and some of them still are) savage head-hunters and cannibals, are worthy of careful study. Patrol officers cover much of the country, investigating homicides and other breaches of the law.

The first men to fly over the interior of New Guinea in the '30s were astonished to see a quite dense population with extensive vegetable gardens laid out in squares and surrounded by narrow trenches twenty feet deep, dug with a long, pointed stick. Their "clothing" was chiefly for purposes of adornment and their stone tools, adzes and axes were Paleolithic. Thus, while technically Neolithic in that they have gardens in which plants are cultivated for food, yet in mentality they are in the Stone Age, using stone implements and the bow and arrow with, until the recent advent of the white man, an established system of tribal warfare.

The success of this enlightened attempt to induce these "savages" to adopt permanently civilized ways will be watched all over the world. If the method succeeds, without any recrudescence of war and barbarism, it will probably be the first time this has happened in the history of the world.

Probably the greatest source of danger for the future is the rapid increase in population which is likely to follow from the suspension of head-hunting and tribal warfare. How will they react to the economic pressures which are likely to follow from over-population?

1 Tasmanoid tribes in North Queensland. *Rec. S. Austr. Mus.* 7: 1-9. 1941.

2 Racial elements in the aborigines of Queensland, Australia. *Zeits. Morph. Anthrop.* 50: 150-166.

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Race crossing of Papuans with Europeans has just begun. An Englishman who took three native wives had two children by each of them. Their skin colour was quite as light as the F1 of the Australian x European cross. Some of the children even had fair hair, although the mother's hair was always black or nearly so (in press.) Other evidence, which cannot be detailed here, indicates that the genetics of skin colour in the Papuans is similar to that of the Australian aborigines. The overhanging nasal tip (the so-called Semitic nose) is as characteristic of Papuans as the beetling brows are of Australians, but transposition of both these features to the other race has been seen, indicating a period of intercrossing when the Australians were on their way across New Guinea into the Australian continent.

Many other problems of racial relationship in this part of the world are involved, but they need not be touched upon here. A detailed study of a dwarf tribe in the mountains of Northern New Guinea (unpublished) leads to definite conclusions regarding their origin from the surrounding tall type. Thus the whole question of dwarf races in man requires a new approach.

These and many other observations show that racial genetics has gradually emerged as a new branch of genetics. Its principles are fundamentally different from those of medical genetics (the inheritance of abnormalities, which occur in all races) and it can be used in the genetic analysis of all modern races. Its successful application, however, requires adequate experience and knowledge both of modern genetical methods and of physical anthropology. In one aspect, this requires further development of the theory and practise of quantitative inheritance.

TOPICAL EVENTS

The attention of our readers is drawn to the CONGRESS INTERNATIONAL DES SCIENCES ANTHROPOLOGIQUES ET ETHNOLOGIQUES, of which the VIth Session will be held in Paris at the (Musée de l'Homme) Palais de Chaillot, 16e from 31st July to 7th August 1960.

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KLINEBERG'S CHAPTER ON

RACE AND PSYCHOLOGY

A REVIEW

By HENRY E. GARRETT

In 1956 the United Nations' Educational, Scientific and Cultural Organization (UNESCO) published a symposium entitled *The Race Question in Modern Science*. This book contains nine chapers dealing with race and racial relations from the viewpoints of the biologist, the anthropologist, the psychologist and the sociologist. The chapter on "Race and Psychology" was written by Professor Otto Klineberg, social psychologist of Columbia University. Klineberg sets himself the task of showing that racial or ethnic differences, when they appear, can be attributed to environmental and cultural factors. He concedes that immediate and remote ancestry may play a small role; but the environment, not the genes, really causes racial differences.

It is fair to assume, I think, that Professor Klineberg has made out the strongest case of which he is capable, and one which he believes will be convincing to his readers. Just how strong *is* the strict environmentalist's position? This review undertakes to answer this quesion by examining Klineberg's evidence.

Social and Cultural Factors

Klineberg begins by intriguing his readers with anecdotes showing how home environment, special training, deprivations and cultural restrictions may affect the responses of a child to various items on a mental test. He cites the case of the Negro child who has never been in a library and hence did not know that silence is observed therein; of the mountain boy who had never eaten "store bought" candy; of the Australian natives who insisted on working co-operatively on a test rather than as individuals; of Samoan children who reportedly drew pictures instead of following directions and tracing a path in a diagram. Interesting materials of this sort are effective in nudging the reader gently over to the view that ethnic differences are, after all, only a matter of cultural differences. Since individuals are so obviously influenced by social factors, why not racial groups. So runs the argument.

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Undoubtedly environmental peculiarities are often crucial in determining the response to a given test item. But this does not mean that *all* test items are affected by cultural differentials. The illiterate child may be feeble-minded as well as illiterate, and his poor test score may reflect a dull mind as well as a restricted environment.

Marked Environmental Changes

Klineberg reports what he describes as "the striking fact" that in World War I, Negro soldiers from four Northern states scored somewhat higher on the Army Alpha test (a verbal intelligence examination) than did white soldiers from four Southern states. This finding has often been cited by social psychologists and sociologists as evidence that Negro-white differences on mental tests are primarily environmental rather than genetic. The argument in the given context is fallacious. When two large groups have been given the same test, we cannot select small groups *ad lib.* from the two score distributions for comparison. In 1918-19, the schools of the South lagged behind those of the North in equipment and teacher-training. The correlation of Alpha and schooling was about ·70, and urban dwellers scored higher than rural. Hence, the difference of 8 points between 665 rural Mississippi whites and 152 urban Ohio Negroes (the largest mean difference) could mean simply that educational handicaps lower the scores of whites as well as Negroes. The only fair comparison on Army Alpha is that of Negroes and whites in the *same* state, where schools and other conditioning factors are at least roughly equated. When this is done, Negroes in the four Northern states overlap whites in these same states by about 25%—almost exactly the degree of overlap found in the country as a whole. It should be added that Negroes in the four Northern states were few in number, and the degree of selection in the samples is completely unknown.

As a second exhibit of the effects of marked environmental differences, Klineberg reports that a group of rural Negro children in Tennessee showed a mean IQ of 58, whereas a group of urban Negro children in Los Angeles had a mean IQ of 105 (5 points above the general average.) Several comments are relevant before we accept this very large range (47 IQ points) as having arisen largely, if not entirely, from environmental differences. In the first place, we have no knowledge of how much these two groups differed genetically. Secondly, since an IQ of 70 or below is regarded by clinical psychologists as indicative of feeble-mindedness, a mean IQ of 58 means that either these children were feeble-

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minded, or more likely that the test administered was not suited to this group. Klineberg does not report what test was given. The mean IQ of 105 attributed to the Los Angeles children has been reported by the author of the study (Willis Clark) to be in error by 10 points—it should be 95. In the Newman-Holzinger study of identical twins, the largest difference between two identicals *reared apart* was 24 IQ points (the average difference was 8.) Twenty-four points would appear to be the best that environment can do when heredity is constant. The difference of 47 IQ points reported by Klineberg means that these two groups differed markedly in native endowment and/or that both figures, 58 and 105, are in error.

A final comment is relevant here as showing the flavor of Klineberg's presentation. Professor Klineberg has known for at least 10 years that the figure of 105 is in error. Earlier in his chapter, he commends Dr Goodenough for her "courage" in admitting that environment plays a role in Negro-white differences on her Drawing-A-Man test—a test which she had at first considered to be "culture-free." It is to be hoped that in future publications, Professor Klineberg will exhibit the same courage in correcting his memory slip.

Selective Migration

Klineberg disputes the claim that the better showing of Northern Negroes on mental tests, as compared with Southern, can be explained by selective migration of the mentally more able from South to North. Characteristically, he considers better environmental opportunities rather than better genes to be the true explanation. Several studies of his own (conducted in the 1930s) are cited as evidence. It is worthwhile examining Klineberg's evidence here with some care, as many writers on social psychology uncritically accept it as disproving the selective migration hypothesis. In his first study, Klineberg compared the school grades of 562 Southern Negro children whose parents had recently migrated to the North with the school grades of their classmates still in the South. School marks were expressed in a rough percentile scale in which 50 represented mean performance. In two of the three Southern cities (Nashville and Charleston) the migrating children were slightly ahead of the non-migrating, their means being 54 and 56. In the third city (Birmingham) the migrating Negroes had a mean school grade of 45—5 points below the mean of 50. For the entire group of 562 migrants the mean was 49, and this figure, on its face, offers no evidence of selective (superior) migration.

Unfortunately, the result offers no evidence *against* selective

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migration either. Dr Leta S. Hollingworth, an eminent child psychologist, has pointed out that a difference of 20-25 IQ points is necessary before a teacher clearly recognizes the gap in mental ability between two children and reflects her judgment in their school marks. Many studies have established the mean IQ of the Southern Negro child to be about 80. Hence, the migrating children would have had to possess IQs of 100-105 (far higher than the 80 usually found) for Klineberg's method of matching to have rated them as superior. Differences between migrants and non-migrants were washed out by the crudeness of the matching procedure, leaving only the chance differences found.

In a second study, Klineberg compares the scores on several intelligence tests achieved by groups of Negro children (12-year olds) whose parents had lived in New York from 1 to 12 years. Most of the parents came from the South. Two facts emerged from this study: (1) the mean score achieved on a highly verbal test (The National Intelligence Test) by the various groups of Negro children improved steadily with length of residence in New York; and (2) the children who had lived in New York all their lives were from 6 months to $1\frac{1}{2}$ years in "mental age" behind white children of the same age level. (This second finding is not mentioned by Klineberg.) It appears that environment did indeed raise the mean scores of migrants, but could not bring them up to the white norms. The schools of New York City—bad as they are today— were probably better in the 1930s than the Negro schools of the Deep South. Hence, the rise in score of the migrating Negroes means little more than that the Negro child learns better under improved conditions—a not very striking result. Klineberg does not report that there was no significant increase in IQ for the various residence groups who were measured on Stanford-Binet, the best single measure of intelligence.

This second study of Klineberg is badly reported and poorly designed. Tests were administered by untrained students; differences between schools were as great as differences between residence groups; measures of variability are frequently unreported so that differences cannot be tested for significance; sampling was uncontrolled and degree of selection unknown. Furthermore, this study could not demonstrate that life in New York *caused* improvement in score.. Klineberg did not follow his subjects longitudinally, rather he studied discrete groups of various degrees of residence. Initial differences among groups were entirely uncontrolled. Klineberg's confident statement that "the evidence points clearly *away* (italics his) from an explanation in terms of inherited racial differences in intellectual capacity" is not borne out by the facts.

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One of the best comparative studies of Negro-white intelligence is not reported by Klineberg, perhaps because it lends strong support to the hypothesis that Negroes and whites differ innately. In 1939, H. A. Tanser compared Negro and white pupils in Kent County, Ontario, Canada. On all of the tests—verbal and non-language—the white children were ahead of the Negroes, on the average by from 15 to 19 IQ points. The Negroes in this study had lived in Canada from the time of the War Between the States, and since 1890 had had complete educational equality. Moreover, socio-economic status, while somewhat in favor of the whites, was much more nearly comparable than in most places in the United States. Many jobs (for example, white collar jobs) rank higher in the Negro occupational hierarchy than in the white, and hence the Negro and white groups were probably more closely matched than they appear to be.

Testing Children at Early Ages

One way of eliminating environmental and social factors is to compare Negro and white children too young to be affected by cultural differences. Klineberg cites two studies in which this procedure was followed. The first, by Dr Myrtle B. McGraw, compared 68 white and 60 Negro infants from 2 to 11 months old, all living in a southern community. All children were given an individual intelligence examination (called " Babytests ") developed by Dr C. Bühler of Vienna. The scale yielded developmental quotients (DQs) in terms of which a child could be compared with others of his age level. The DQs of the white babies were higher than those of the Negro children at each month level. Differences averaged 13 points, the mean DQ for all the Negro babies being 92 and for all the white babies 105. Just 28% of the Negro children exceeded the mean DQ of the white children (almost exactly equal to the Negro-white overlap of Alpha scores in World War I.) Klineberg does not accept the author's conclusion that the result reflects innate inferiority of the Negro child. Instead, he declares that this conclusion " cannot be accepted " because of the poorer nutrition of the Negro babies.

Klineberg prefers a study of Dr B. Pasamanick in which 53 Negro children were tested on the Yale Development Examination at age 26 months. These children were not at first significantly below the white norms. On successive tests, however, the Negro babies fell below the norms in the language items, and went above on the motor tests.

For purposes of racial comparison, the McGraw study is better than that of Pasamanick. The nutrition of McGraw's

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Negro babies cannot explain the consistent differences found. The Negro children were up to the norms for Negro children in the United States in height and weight and had they been heavier and taller would have been atypical. The socio-economic levels of the white parents were somewhat higher than those of the Negroes, but many of the Negro parents reported college and normal school training. In Pasamanick's study, Negro children were often mulatto, were from better than average homes, and their parents were superior to the average Negro in education and income. Moreover, children were evaluated in terms of broad developmental categories and deviations from the norms must be large to be detected. It is no accident that Klineberg remarks concerning the Pasamanick study that it was carried out "under the direction of Professor Arnold Gesell, the famous child psychologist of Yale." The author of the first study (McGraw) is referred to without professional title!

Exceptional Children

Klineberg reports—with approval and without question—the case of a Negro girl of 9 years who was found to have an IQ (Stanford-Binet) of 200. He remarks that "Negro ancestry is not accompanied by any special limitation on the individual's capacity for achievement." The reviewer does not question the integrity and good faith of the psychologists (Witty and Jenkins) who report this case. At the same time, apart from any considerations of race, there are serious reasons to doubt the authenticity of *any* IQ of 200—unless the child is very young. It should be noted that the odds against such an IQ are astronomical (IQ 200 lies 8.5 SD above the mean of 100). In the entire American population, one would hardly expect to find more than one such child. Again, a 9 year old, to attain an IQ of 200, must have a mental age of 18 years. To be sure 16 is given as the "average adult" level in the 1916 Stanford-Binet, and 18 as the "superior adult" level. But these designations (which are no longer used) do not represent mental ages in the same sense that earlier MAs do: namely, CAs corresponding to average performances. Instead, these MAs are arbitrary labels and might just as fairly be called 15 and 17. Above 14 years, the MA does not increase with CA and the IQ has no real meaning as a developmental ratio. A child of 5 could conceivably test at 10 and thus achieve an IQ of 200; but a child of 9 who runs off the scale is simply unmeasured. This child's mother is reported to have been a teacher and the child could have picked up knowledge of the tests from books or from the mother. Coaching is, of course, always a possibility. In any event, the evidence is dubious.

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Professor Klineberg does not report that this bright child was one of 103 Negro children with IQs of 120 and above found in the Chicago schools after tests had been administered to 8400 Negro children. Nor does he mention that 78% of these 103 bright Negro children reported some white ancestry. Since the incidence of Stanford-Binet IQs of 120 and above in a group of 8000 white children will be from 500 to 800 (depending on the form of Stanford-Binet used), the ratio of bright white to bright Negro children in the schools is at least 6 or 7 to 1. This hardly bears out Klineberg's statement that . . . "results of the tests lend no support to the view that Negroes differ from whites in their ability to produce outstanding individuals." In fact, results indicate just the opposite.

Race Mixture

Klineberg quotes with approval the UNESCO Statement on Race to wit that "There is no evidence that race mixture as such produces bad results from the biological point of view. The social results of race mixture, whether for good or ill, are to be traced to social factors." There are many data which conspire to dull the authoritarian ring of this pronouncement. Davenport and Steggerda in their Jamaica studies reported that race mixture leads to physical as well as mental disharmonies. The weak, disease-ridden population of modern Egypt offers dramatic evidence of the evil effects of a hybridization which has gone on for 5000 years. In Brazil, coastal Bahia with its negroid mixtures is primitive and backward as compared with the relatively advanced civilization of white southern Brazil. In the West Indies, the civilization is advanced almost exactly in the degree to which the populations are unmixed with the Negro. Haiti is an unhappy example of what the Negro can do when left to govern himself.

Rate of Growth

Klineberg contends that the Negro rate of growth is no more rapid than that of the white and does not attain its peak any earlier. There is much data to contradict this view. With increase in age, Negro children fall farther and farther behind white children in school performance. In a study of more than 500,000 Negro and white soldiers in the American Army during World War II, of those who completed grade school, 33·4% of the whites and 76·5% of the Negroes fell in the two lowest scoring categories on the Army General Classification Test. Of those who completed college, ·4 of 1% of whites and 14·4% of Negroes fell in the two lowest scoring categories.

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Race and Crime

Klineberg states flatly that "no racial factor has been discovered to be responsible" for crime. As usual, the fault lies in the social environment. Undoubtedly social factors *are* important, but it is hard to see how such influences can excuse the literally scandalous crime rate of the Negro in the United States. In 1954, the FBI reported (*Dept. of Justice*, Vol. 25, No. 2) the following ratios of Negro to white crimes: For murder, the Negro/white ratio is 16:1; for robbery, 13:1; for prostitution and vice, 16:1; for rape, 6:1. These ratios hold despite the fact that the Negro constitutes only 10% of the general population. It requires a degree of imagination not possessed by the reviewer to see no "racial factor" in these figures.

Professor Klineberg concludes his objective review of race and psychology with these words: "The scientist knows of no relation between race and psychology." To paraphrase a famous remark, seldom has so broad and positive a generalization come from such feeble data.

OUR CONTEMPORARIES

PROBLEMS OF THE PEOPLES OF THE U.S.S.R. Published by the League for the Liberation of the Peopes of the U.S.S.R., Munich, 1960.

Deals with the Results of the Soviet National Policy; the 1959 Purges in the Communist Parties of the Soviet National Republics by V. Borysenko; The Current Nationality Policy of the Party by Paviel Urban; The Dangers of Soviet Infiltration; Russification and the Tatars by V. Musabai; Colonialism in the Seven-Year Plan by Yevhen Glovinsky; Book Reviews, etc.

THE EUGENICS REVIEW, London, April 1960, has articles on—Blood Groups in the Study of Human Populations by A. E. Mourant; Birth Control in China by Han Suyin (Dr Elizabeth Combe); Evolutionary Systems—Animal and Human—by C. E. Waddington; The Guiness Family by Lord Moyne; Some facts about the Population of England and Wales in 1957; etc.

LE MUSEON, Revue d'Etudes Orientales Tigdschrift voor Oriëntalisme. Louvain, 1959. Some Aspects of Caucasian Social History by Cyril Prince Toumanoff.

TRADITO, STUDIES IN ANCIENT AND MEDIEVAL HISTORY, THOUGHT AND RELIGION, Fordham University Press, New York, 1959, contains an important and exhaustive article, an Introduction to Christian Caucasian History—The Formative Centuries (IVth-VIIth) by Cyril Prince Toumanoff. This is of great use for understanding the sociological organisation and history of the Caucasian Aryans, as well as for discussions upon their ethnology, and related Anatolian ethnological problems.

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A NEW ANTHROPOMETRIC APPROACH

By

S. D. PORTEUS, D.Sc., and J. P. KLEMAN, M.A.

It should be readily admitted that ordinary intelligence tests constitute only a partially adequate approach to the question of ethnic group differences. No tests of this type now available are "culture-free," though the Porteus Maze Test comes nearest this goal. At least it has been accepted by many primitive peoples, including Australian aborigines, Kalahari Bushmen, Indian Santals, Malayan Sakai, Zambali negritos, Bantu tribes, Japanese Ainu and Navaho Indians. Most psychological tests are either incomprehensible to untutored subjects or are considered by them as unworthy of serious attention. Many investigators, however, have testified to the interest of primitive peoples in the Maze.

But even though test scores are obviously affected by cultural factors, there is no justification for disregarding completely the mental differences they reveal, especially when the performances of primitive groups are compared among themselves. Most social anthropologists are content with criticism of the methods used in contrasting performances of whites with non-whites, and neglect altogether the more serious evidence of racial differences.

It would, without doubt, be of very great advantage if a new approach, unaffected except to an insignificant degree by educational experience, were available for anthropometric purposes. The exception would rule out most tests of intelligence and probably all tests of personality based upon questionnaires of verbal judgments. Instructions for tests and replies are often unsatisfactory if conveyed by interpreters.

Due to a lucky discovery by the senior author, he has been able, with the assistance of a team of young psychologists at the University of Hawaii, to evolve a measure, independent of language, of a basic factor in personality assessment. This measure reflects the individual's tendency to conform to a previously established pattern of behavior and can also be used to determine the persistency of the conformity. This is basic to all personality measures which are founded on characteristic styles of response.

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Unless a trait has a marked tendency or constancy of appearance, it does not belong with the personality as it is psychologically described.

Some time ago it was found possible to identify, without names, as the work of the same individual, two Maze test records when repeated within a brief period of time. This could be done by comparing similarities in certain details of execution at the beginnings and ends of the tests. Correct identification was achieved in 600 pairs of records in about 90 per cent of instances. Later demonstrations showed that the comparisons could be made on the repetition of one test, the XI Year maze, after the full series had been applied, using less than 10 per cent of the total performance.

Moreover, this conformity to a self-established pattern is very largely subconscious as the subject's attention is too absorbed in finding his way out of the maze to note where he began or ended, or the type of turn he executed at any particular spot. It took us over a year to work out scores based on paired similarities. We term these Conformity-Flexibility or C-F scores, and theorize that individuals with normal tendencies to conform will have C-F scores in the middle ranges. The extremes denote at the one pole compulsive persons, at the other the extremely fluid, possibly disorganized individuals.

To determine the persistency of the trait, the whole testing process should be repeated after a period of elapsed time. In some persons the subconscious pattern is retained and reappears after a year's interval. The amazing feature of the phenomenon is that the pattern is set up, not on the basis of hundreds of repetitions of the activity as in conscious learning, but after a single or a second repetition only. Thus it differs completely from identification of handwriting, signatures, personal expressive movements, such as gestures, tone of voice, gait, etc. This is, as far as we know, the first attempt to measure subconscious memory. Experiments have shown that retention follows the same laws that govern conscious memory. After an interval of time there is observable a normal fading. Delinquents retested after two months fell as regards matchable records from 90 to 70 per cent., while non-delinquents fell to 35 per cent. In adult criminals after two years, the pattern had so weakened that their C-F scores had been cut in half. On the other hand, another group of delinquents after four months showed an insignificant loss. We found their conformity to pattern astonishing.

Whole new areas of research are thus opened up. We must investigate the effects of age, education, sex, occupational training,

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intelligence, abnormal mental conditions, etc. Race differences in Hawaii are being studied by the junior author. Apparently differences in sex and race are real, and these will be reported in due course.

In general, the possible implications of investigation are exciting. By means of the new approach, we may be able to differentiate the nomophile, the person who readily accepts patterns of thought and action and adheres closely to traditional systems of thought and action, from the nomophobe, who is the perpetual nonconformist, the iconoclast, the crusader of change. If these things can be measured, at what stage does the tendency to become set appear, and how does it progress? Is there a concomitant of old age which is analogous to arteriosclerosis in the blood vessels, and which we might term neurosclerosis, a hardening of the nerve paths?

Of educational interest should be the working out of the relationship between conscious and subconscious memory. Is the ready learner assisted in memorization by his subconscious memory? It is possible that we can make actual demonstrations of sex and racial differences along these lines. How do systems of education help to bring about greater or less conformity or flexibility? To instance all the enquiries suggested by psychologists would expand this preliminary presentation unduly.

The approach and scoring are illustrated by photographic samples. It should be emphasized that this system of scoring may not be final. Subjective judgments are involved and our aim has been to give the scores a high degree of reliability. At a later date we hope to publish a fuller account of the approach, together with a large number of sample details.

We may cite one study as an example of the usefulness of the method. Forty-eight high grade defectives and dull normals were examined by the Porteus Maze (Original or Vineland Series), the XI Year maze was repeated, and the C-F scores calculated. Half the group were then put on daily dosages of 150 mg. of chlorpromazine for two months, and the whole group were given the XI Year test again.

The tranquilizing drug had the effect of re-enforcing the subconscious pattern, probably through the decline of initiative and planning ability. The experimental group actually gained 1·36 points in mean score. In other words, their performance after two months' delay was slightly more like their original efforts than was the immediate repetition.

On the other hand, the control group after two months showed the expected fading of the subconscious pattern. They lost

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3.73 points of C-F score, representing a weakening of about 36 per cent. in the persistence of the pattern.

Another study contrasted experimental and control groups of chronic psychotic patients. The drug patients (N 18) gained 2·3 points after two months, while the control group lost 4·1 points. The algebraic sum of the differences was 6.43 points, a net change of over 40 per cent.

As an appendix to this article we include four illustrations. The first shows photographs of a pair of XI Year mazes performed with an interval of five weeks between testings. These are about average as regards similarity. Many specimens with a year between are even more similar. Two areas only are considered in the scoring system. The first extends from the starting point S through the second opening in the maze; the second is the final exit.

The starting point can receive a maximum of 3 points if *S* begins the two performances within 1/32 of an inch of each other; 2 points are allotted if within 1/16 of an inch; 1 point if within 1/8 of an inch. In the records illustrated, *S* earns 1 point. Each of the turns that follow are scored as follows: Turn A, two regular curves but not very similar, 2 points; turn B, two very similar curves, 2½ points; turn C, two similar flat curves, 1 point; turn D, two barely recognizable curves, ½ point; turn E, two regular curves, one round one flat, 2 points; turn F (final), one tight curve, one right angle, 2½ points; matchable ending (maximum 2 points), ½ point; general similarity of beginning (maximum 3 points), 2½ points. Total 15½ points.

It will be noted that, due to lack of space, some of the items scored are not illustrated in our samples.

Acknowledgements are due to the National Institute of Mental Health in Washington for supplying the funds for Project MY-2316, under which this study has been carried on.

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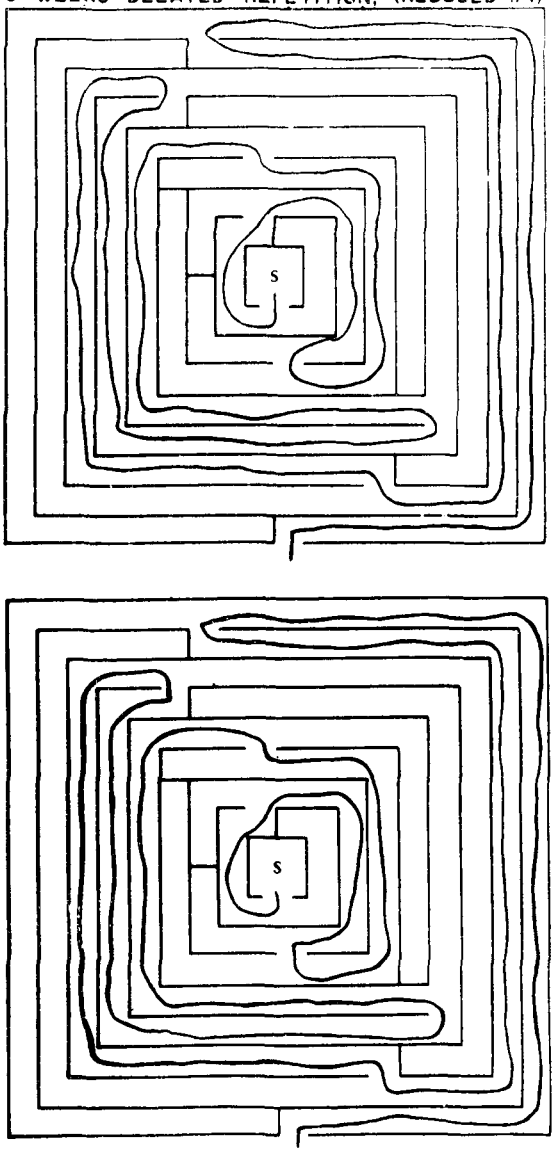
5 WEEKS DELAYED REPETITION, (REDUCED 1/4)



The above Plate supplied by Professor Porteus has in this illustration been further reduced to 88% of its original size.—Ed.

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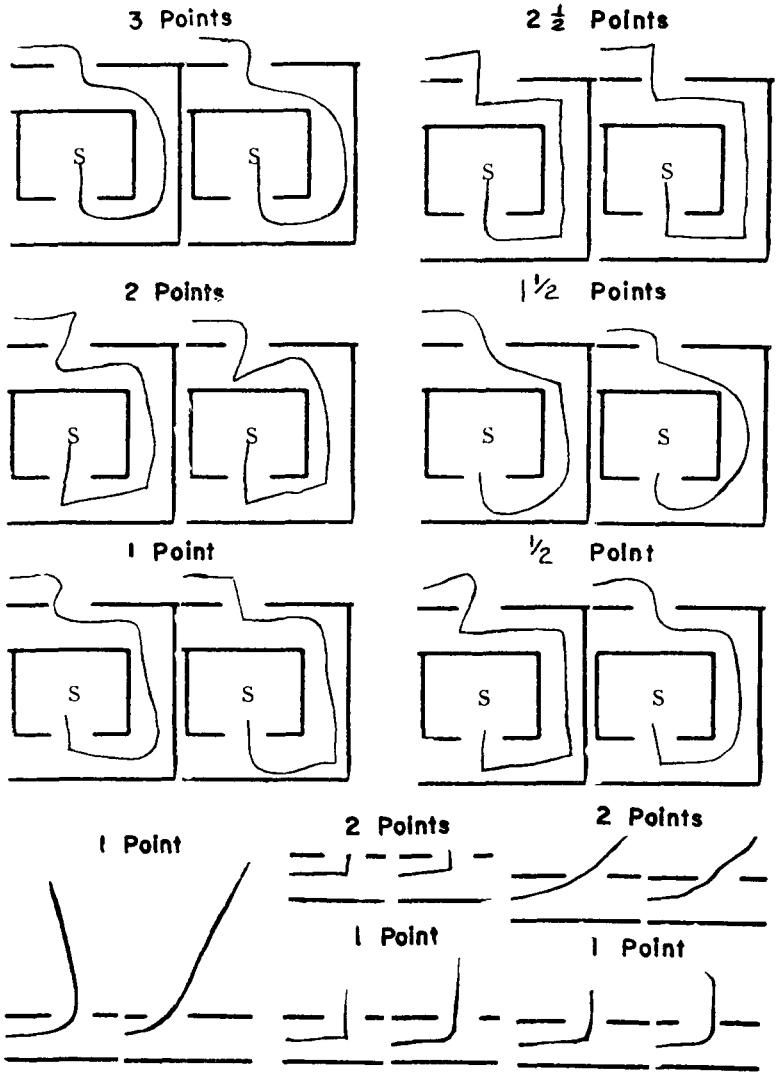
C-F SCORING RULES AND SAMPLES

GENERAL SIMILARITIES



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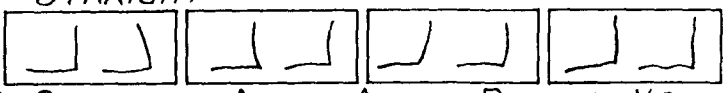
C–F SCORING RULES AND SAMPLES

Pts. **SIMILARITIES**

4 RIGHT OR NEAR RIGHT ANGLES

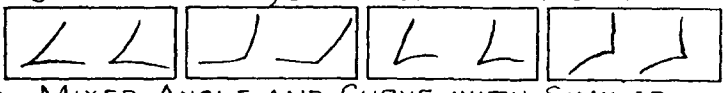
3 ½ NEAR RIGHT ANGLES, STRAIGHT LEGS

3 NEAR RIGHT ANGLES, LEGS NOT QUITE STRAIGHT



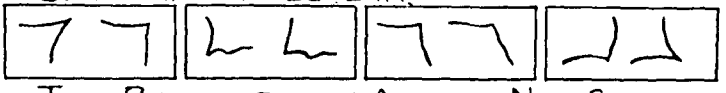
2 ½ OBTUSE OR ACUTE ANGLE, DEFINED VERTICES, STRAIGHT LEGS

2 SAME AS ABOVE, LEGS NOT QUITE STRAIGHT

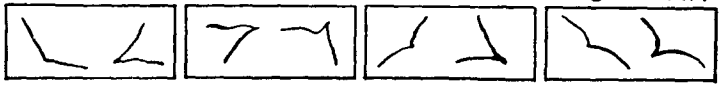


1 ½ MIXED ANGLE AND CURVE WITH SIMILAR CHANGES IN DIRECTION

1 ANGLES SOMEWHAT DISSIMILAR, LEGS SOMEWHAT IRREGULAR.



½ TWO RECOGNIZABLE ANGLES NOT SIMILAR



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C–F SCORING RULES AND SAMPLES

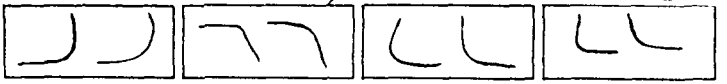
Pts. **SIMILARITIES**

3½ VERY SIMILAR TIGHT CURVES

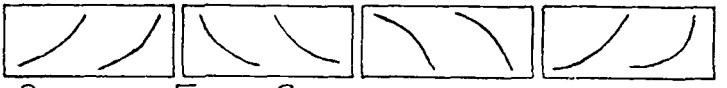
3 SIMILAR TIGHT CURVES

2½ VERY SIMILAR ROUND CURVES

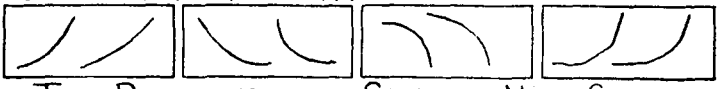
2 REGULAR CURVES, ONE ROUND ONE FLAT



1½ VERY SIMILAR FLAT CURVES

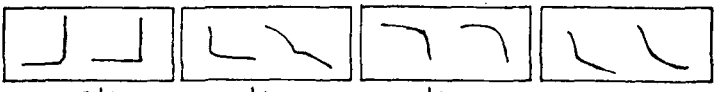


1 SIMILAR FLAT CURVES



½ TWO RECOGNIZABLE CURVES NOT SIMILAR

SPECIAL COMPARISONS



2½ ½ ½ 1

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FALLACIES INHERENT IN POLYMORPHISM*

By R. GAYRE OF GAYRE

The polymorphic interpretation of the distribution of man has now reached such an extreme that the time has come to examine it critically.

Polymorphic interpretations are due primarily to geneticists. The science of genetics is an essential one in any interpretation of living matter. It has therefore a considerable contribution to make. Starting with Mendel it has supplied us with the mechanism of reproduction, and so it is able to interpret how heredity is transmitted not only in the individual but in those natural groupings of men which have arisen in the past, as well as in similar groupings found among other animals. On the other hand, since it is only capable of true interpretations where it can obtain all the relevant data involved, it has its limitations, and a geneticist cannot claim to be the absolute interpreter of phenomena where he is not in possession of all the facts. Yet this is what some of them are pretending to do, although it is manifestly obvious that in far too many cases it is not possible for them to be in possession of all the evidence. When we deal with the evolution of Man and the racial divisions, and indeed varying species which it can be fairly argued have existed or even still do exist, we are concerned not merely with a population in one location at one point of time. We are, on the contrary, dealing with numerous differing populations spread over many continents, separated by vast distances, often by well-nigh impassable physical barriers, over long periods of time, during which the environmental conditions have changed radically from epoch to epoch. As a consequence apart from genetics and serology many sciences are involved in an understanding of man. In the physical plane alone there may be mentioned zoology, palaeontology, prehistoric archaeology, physical anthropology, palae-geography, palae-climatology, human geography, and the synthesis of all in ethnology. In addition, there are the effects of social anthropology upon the reproduction of human groups. The geneticist and serologist is not trained, in the vast majority

* Polymorphism (many forms) and polytypy (many types) is the state of more than one form or type of any given character in any single race.

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of cases, in these other disciplines, and very often is extremely weak in essential ethnological training. Yet a clear understanding of man in his various divisions cannot be arrived at without taking all the results of work in these fields, including the wide gaps which still exist in our knowledge, into account.

Zoologists, palaeontologists, physical anthropologists, and ethnologists, in the past have arrived at the conception of both specific and racial divisions in the classification of man on the basis of the physical characters of the types of men who have been the subject of their study from tertiary times to the present. We now have these divisions challenged by a certain group of geneticists. They postulate polymorphism of all traits in humanity. They say that there have never been races at any time approaching those so classified by the older sciences. They see, in effect, a universal breed of men and a series of clines from one region to another.

From this some of the bolder ultra-polymorphists go on to say that there never have been periods in any particular group when they approached anything like such homogeneity that they could be considered a race. As a consequence race is a myth. For evidence of their statements they refer to the polymorphism, either in blood groups, or in certain physical traits, in such as the *modern* European populations.

No one denies that there is an element of polymorphism inherent (through mutations) in any living population. The phenomenon of polymorphism itself is not in question. What is is this ultra-polymorphistic doctrine. I propose to use the term *Nongenists* for these essentially Aracialist Ultra-polymorphists—for they deny what has been the experience of man in all ages and in all societies, namely that there is such a thing as the *genus*, as it was understood by the Romans—the *race*, as we understand it in our literature. There are serious implications which flow from this extremist *Nongenic* doctrine. If all stocks are polymorphic in significant proportions to disturb any over-all classification into races, which is what they say when they deny that there are such races, then the whole classificatory work of palaeontologists, zoologists, and botanists, in connection with evolution since Darwin completely collapses.

A typical line of argument of the *Nongenist* may be illustrated in connection with the East Baltic classification of established ethnology. The East Baltic type is found in the Baltic region and into Finland. But we now have *Nongenists* alleging that the grey eyes and ash blond hair, which is typical of this race is, when found in Finland, a quasi-Mongoloid character due to an element for light hair and eyes in the Mongoloid stock which is a postu-

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lated parallel development to the blond of the Nordics. The East Baltics are not to be looked upon as deriving their blondness and light eyes from within the same specific Caucasoid group as that which includes the Nordics, but from this alleged polymorphism within the Mongoloid. It is obvious that if the doctrine of polymorphism is to be pushed to such limits, then all basis for classification is destroyed, not only in deriving the East Baltics out of the fair Caucasoid stock, but also in deriving any living type from an earlier similar type. It seems to us that ultra-polymorphism which is being so assiduously sponsored today is not only anarchistic within the sciences concerned with evolution, but it indicates an anarchistic mind, whch is seeking to destroy established landmarks for the sake of destroying them. Indeed, we would go further, and say that there can be little doubt, in view of the political activities of some of the advocates of ultra-polymorphism, that some of them are motivated by the desire to destroy the concept of race for allegedly ethical and undoubtedly political ends.

Polymorphism is due to mutations. Once a mutation has occurred in any group segregation will occur as a result of random selection in some cases. A number of people of the same mutated stock will survive in one place, while in another the same type may die out. In addition a mutated type may be more fitted to the environment and so survive and the original strain out of which it comes is destroyed.

Assortative mating, which occurs in man, although nowadays not to so highly developed a degree as among other animals, must have been a more potent force when he was emerging into man in the tertiary period 50,000 generations or more ago. Once, either by randon selection, or by natural selection, a given stock began to take on a particular type, then assortative mating would hasten the development of that type, and as man emerged towards being a social and intellectual animal, fashion itself would help that development, and so off-set the decline in the instinctive physical factor of assortative mating. Or where a strain was genuinely polymorphic, because random selection and natural selection in a given environment were working at cross purposes, then assortative mating would have the effect of causing segregation, and ultimately the original group would split in two. It is because of this that we find all animals grouped in familial clusters, and not in clines. They do not shade off into each other, in other words form so-called "clines" but they bunch to form the distinctive types with which we are familiar.[1]

[1] So-called balanced polymorphism is usually to be found only in those characters which are either not subject to selection or only slightly so, or where only the hybrid is.

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Mutations are rare events. For instance Haldane[1] gave the frequency in the case of haemophilia as one in fifty thousand. Stern[2] gives the figure of one in twelve thousand births in the case of Chondrodystrophic dwarfism, which means one in twenty-four thousand genes. Because mutations are so rare they required a long period of time, as they had, from the emergence of the anthropoids (30 million years ago, of 1½ million generations), in order to create first a significant polymorphism, and secondly for random and natural selection, aided by assortative mating, all working together, to reduce the polytypic groups to familial clusters. Over this huge length of time man was subject to entirely the same laws as the rest of the species and genera out of which he was arising. The whole of his trend of evolution had been settled long before he had mentally and emotionally risen to the stature of man, which was only in the last thirtieth part of that great division of time.

Consequently man must have been in familial clusters (that is species and races) by 1 million years ago, and any surviving polytypy in each cluster must have been very little. Such as there was would be only due to the relatively recent mutations which had occurred, and would continue to occur from time to time to our own day, and all of which would be subjected to selection, and the force of assortative mating. The evidence of earliest men supports this view. We do not, for instance, find Neanderthal man vastly polytypic. Variation there is from region to region, as sub-races were evolving, and from one age to another, as advancement or retrogression was taking place, but not such as compels us to say that we are uncertain, in any Neanderthal group, that this one or that is Neanderthal.

Since that is so when we come upon Homo Sapiens it is not surprising to find that we have clear indications of types which are demonstrably related to the ethnologists' races of today. An example is Cro-Magnon man whose characters are largely those of the Atlantic, Faelic or Dalarnian race—the Keltic of the Harvard survey of Ireland. This race—an evolution out of the original stock from which also came the Nordic—has throughout its distribution dark hair with light eyes—and where we have Cro-Magnon depicted in the cave paintings of the Magdalenian period he has the same "disharmonic" combination. Located in the relatively warmer south-west, while the Nordic was undoubtedly developing in the frigid north-east, it is understandable that he should have

[1] Mutation in Man. Proc. 8th Intern. Congress of Genetics, *Hereditas*, Supplem. Vol., 1949, pp. 267 *ff.*

[2] *Principles of Human Genetics*, 1950, pp. 407 *ff.*

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retained the dark hair which the Nordic and the East Baltic have lost.

The so-called clines are explicable on the basis of two factors. First there have arisen balanced breeds.[1] The East Baltic is probably such a racial breed between Nordic and, through genetic drift, some Mongoloid element from which the broad skull and face has been inherited. Secondly, the crossing of distinctive races (in the Caucasoids, the Nordics, Atlantics, Mediterraneans) with each other and such racial-breeds, is sufficient to account for the gradual transition from the centre of one cluster to another. But this cline is not evidence that the polytypy which is now found in any given European community is due to the fact that the peoples from whom that community is descended were each in themselves markedly polytypic. Furthermore, this is the only basis on which *all* the facts are explained. The *Nongenists* are clamant in saying that there never was any pure race. But all the facts are against them. Anglo-Saxon graveyards, Megalithic Long Barrows or Round Barrows show clearly communities in which monotypy is far more prevalent than polytypy—and where polytypy does occur in these cases it is explicable by later racial crossing. Furthermore, arguments based on succession of racial types from age to age, such as in Scandinavia, are based on a complete ignorance of ethnological facts, which are capable of explaining the phenomena much more economically than by arguments based upon original polymorphism on a grand scale in the early communities of man which settled in Europe.

Polymorphism is only likely to occur, and persist, in such features as may not be subject to selection, or which are such minor features that they hardly enter into the basic criteria upon which the ethnologist must establish his classifications. That there is polytypy of that kind no one denies—and it is that which accounts for the infinite variety in human beings and animals, so that we can recognise each other, or the shepherd can recognise his sheep. Such polytypy does not destroy the over-all anthroposcopical characters of any racial group. Consequently, for instance, despite even racial crossing which in the last few centuries has occurred as the Bushmen have been driven into the Kalahari by pressure of

[1] It is usual to account for such types as the Dinaric, Alpine Armenoid, Hamite, etc., by saying that they are divergent developments from the Nordic, Atlantic and Mediterranean. This leaves unexplained why it is that they are usually now, or in the past, someway or another midway between the stocks on each side of them. They can be most economically accounted for as balanced hybrid stocks, which form the human counterpart of breeds among animals.

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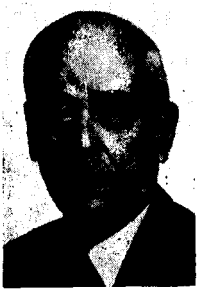
BIOGRAPHICAL NOTES ON THE CONTRIBUTORS TO THIS NUMBER

Sir Charles Galton Darwin, K.B.E., F.R.S.; Tait Professor of Natural Philosophy in the University of Edinburgh from 1923-36, and Director of The National Physical Laboratory, Teddington, from 1938-49. More recently he became interested in the present subject, and in 1951 he wrote *The Next Million Years* (published by Hart Davis).



R. Ruggles Gates, F.R.S.; M.A., Mount Allison 1904; B.Sc., McGill 1906; Ph.D., Chicago 1908; D.Sc., London 1915; LL.D., Mt. Allison 1927. Lecturer in Biology, St Thomas' Hospital, London, 1912-14; Associate Professor of Zoology, University of California, 1915-16; Reader in Botany, King's College, London, 1919-21; King's College Professor, 1921-42; Hon. Research Fellow in Biology, 1950-54.
Travels in Anthropology: Eskimos 1928; Cuba 1952; Mexico 1953; Japan 1954; Cape to Cairo 1955; Australia and New Guinea 1958; India 1959; Taiwan 1960. *Photo by Fabian Bachrach*

Henry Edward Garrett, A.M., Ph.D., D.Sc.; Professor, Columbia Univ., till 1956. Professor emeritus of Psychology, 1956- . Visiting Professor, Virginia, 1956- . Past President: Amer. Psychol. Assoc. (1946), New York State Psychol. Assoc. (1940), Eastern Psychol. Assoc. (1944), Psychometric Society (1943). Member National Research Council (1938-40), Vice-Chairman, 1940; Phi Beta Kappa, Sigma Xi. Author —Textbooks, statistics, general psychology tests and measurements, etc. Master gunner (1917-18); member of committee, classification of military personnel (AGO), 1940-45.

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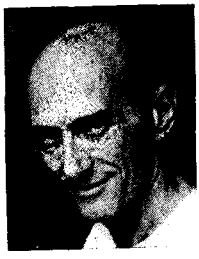
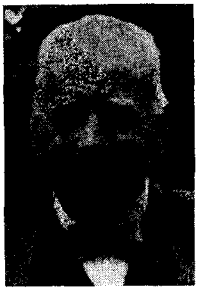
S. D. Porteus, D.Sc., F.I.A.L.; Professor, Clinical Psychology (emeritus), and Principal Investigator, National Institute Mental Health, Hawaii University; Government Research Scholar, Anatomy, Melbourne. 1915; Lecturer, Experimental Education, Melbourne, 1916; Director, Research Laboratories, Vineland, N.J., 1919; Director, Psychological and Psychopathic Clinic; Professor, Clinical Psychology, Hawaii, 1922; Australian National Research Council Expedition, 1929; South African Council Expedition, Kalahari, 1934; Director, Research, Mental Hospital, Kaneohe, 1957, Research Specialist, Hawaii University, 1958.



U. R. Ehrenfels, Baron von Ehrenfels. Visited India in 1932 and again 1939 where he conducted research in matrilineal societies (*Mother-right in India,* O.U.P., 1941; *Ilm-ul-Aqwam,* Anjuman Tarriqi-i-Urdu, Delhi 1942), among foodgatherers (*Kadars of Cochin,* 1952) and in the changing position of women (*Status of Women in South-East Asia,* Longmans, 1939). The Elin Waegner Foundation, Stockholm, awarded the 1957 grant for extension of his research to East Africa. He is now Professor and Head, Dept. of Anthropology, University of Madras. A book on Africa "The Light Continent," is in the press.



Major William Shaw Cruickshank. 1918: Asst. Controller of Labour, G.H.Q., France, where he had under his direction, among other peoples, a 100-000 strong Chinese Labour Corps. In 1920 he resumed his profession of Chartered Architect, living and working in Australia, and throughout the Far East. He has also visited Malta, Africa and India. A professional newspaper correspondent for many years, he was Lecturer and writer to the Ministry of Information throughout the war against Japan.

Photo by G. W. Day & Son, Dunbar.

David Purves. Educated at Galashiels, and Edinburgh University, B.Sc.(Hons.) 1950, in Biochemistry, and Ph.D., 1953. Engaged in research and in an advisory capacity in plant and animal nutrition in relation to agriculture. Special interest in nutritional problems resulting from depletion of micronutrients from the soil: and also in the related Malthusian problem in the light of the present limited food-producing potential of the world's soil resources.

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Hottentots and then of Bantu, it is easy to identify a Bushman from either Hottentot or Bantu.

It may also be added that the still surviving uniformity of the Bushmen (despite this racial miscegenation which has occurred) is a proof of the familial clustering and tendency towards monotypy rather than polytypy.

It is often said by *Nongenists* that the northern peoples were polytypic even at the dawn of history. This is not how they appeared to those who observed them. They were, anthroposcopically, struck by their homogeneity, and lightness of colouring, whether they were Anglo-Saxons, or other Germans. Likewise the Celts gave a similar impression, and that has lasted on in folklore, which distinguishes between the Celts as the fair and the pre-Celts (Atlanto-Mediterraneans in the main) who were dark haired. Had these peoples been polytypic for hair colouring it is hard to see how such impressions could have formed over a wide area, and survived. Furthermore, the very fact that when a dark, and so a-typical person occurred, no time was lost in naming him by that character. Godfred the Black and his son Olaf the Black, Kings of Man, were so named because they differed from the other Godfreds and Olafs who were far from brunets. Such names are no more evidence of polytypy of types in the basic stock, than is the name of Magnus Barelegs evidence that the Norsemen were polytypic in their dress—large numbers wearing kilts and others jodhpurs. They indicate an intrusion into the general stock of an outside element. In the dark hair probably an inheritance from Atlantic origin through Celtic ancestresses is involved, rather than any actual mutation in that direction, just as Magnus Barelegs took his kilt from his Scottish upbringing and his Gaelic mother.

The time has come to put the conception of polymorphism in its true perspective and to integrate it in the study of evolution and subordinate its claims to an over-all scientific discipline. It must not be allowed to dictate *in vacuo* to other sciences which have by laborious researches over generations, and on wide fronts, established classifications which have been capable of integration and interpretation within the overall framework of biological evolution, and the development of human societies. To allow it to continue unsupported by any other evidence than a theoretical and partial interpretation of the facts on its present course unchallenged will only produce a cancerous growth within the sciences devoted to ethnological interpretation. On the other hand polymorphism, in its place, is a valuable addition to our knowledge, and it is integratable with existing facts, and is not in opposition to conclusions reached by the other disciplines.

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NORTH-SOUTH DICHOTOMY

A Trend in the Development of National Units

By U. R. EHRENFELS

In this paper an attempt is made to review existing differences between populations in the northern and southern halves of big nation areas in both hemispheres and to link them to two jointly acting principles: (*a*) an increased **mobility,** and (*b*) a relative **climatic differentiation.**

So far north-south differences have generally been considered as the result of locally varying factors such as religion, language, technology or racial components. In the search for a more general principle of differentiation the following explanations have been proposed.

Let us first consider some facts as illustrations.

The USA fought a civil war over differences of policy in their southern and northern regions. In Russia the integration of the Ukraine in the south of the greater USSR frame brought about an almost similar situation after the October Revolution of 1917.

The northern and southern halves of Ireland, Korea and Viet Nam have gone another way. They have parted company dramatically in recent history. Some fear that the same may happen to Nigeria after independence. The Germans fought a thirty years' war between north and south, during the 17th century. In this case the north-south tension did not calm down appreciably until Austria took an independent path after the Prussian war of 1866 and the last restoration of Austrian independence in 1945.

Chains of other countries too feel the existence of north-south tensions, though they may express them less belligerently. Such chains follow the meridian, alone lines between pole and equator: Iceland, Scotland, Ireland, England, France, Spain, Morocco and Ghana may be taken as one; Holland, Belgium, Germany, Switzerland, Italy, Egypt, Sudan and Uganda, another. Then further east, there are Mongolia, China, India and Ceylon. These and others in between offer examples of comparable tensions between, in each case, a northern and southern half. In fact none of the larger national units of the northern hemisphere is entirely free from these paired opposites. They express their existence in

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mutual attitudes among the populations of the countries' northern and southern regions (Ehrenfels, (1957:90).

A way of looking at this north-south behaviour pattern would be to compare it with east-west tensions. Perhaps these too follow the same almost monotonous regularity in their mutual attitudes. In Russia, Poland, Czechoslovakia, Germany, Yugoslavia and Turkey, the east is less overpopulated, urbanized, industrialized, and the west is the guardian of older traditions. In the USA, Canada, China, France, Sweden and Spain, the situation is exactly the reverse. In both groups of countries, the mutual attitudes of east to west are conditioned by varying situations. In other words: east-west attitudes do not follow stereotyped patterns but adapt themselves to locally changing conditions. North-south mutuality, on the other hand, shows a picture of constancy even under quite different conditions (Ehrenfels, 1956). Moreover, there are many countries without any significant east-west tensions at all, though their north-south dualism is palpably developed: England, Italy and Burma—to mention a scattered few. Attitudes based on east-west differences occur occasionally and do not follow a general, common pattern, whilst north-south mutuality is almost universal. More significant still, north-south attitudes conform to a pattern which is wide-spread in pre-literate simple social systems: dual organizations. In these civilizations two complementary halves are frequently associated with such concepts as "upper and lower," "bigger and smaller," or "sky and earth," and the like. With this background in mind it would appear to be more than a mere coincidence that our maps, charts and globes are so designed that the north comes on top and the south below (Ehrenfels, 1959), although there is no inherent geographical reason for this arrangement. They could be, and actually have been, made also in the reverse position, or with east on top, as on some of the early Roman, Chinese and Arabian maps (Fordham, 1921:40).

North and south mutuality among big nations fits into this general pattern of "upper and lower." A more than accidental significance may thus be attached to the commonly used figure of speech "up north," or "down south." In practically all countries of the northern hemisphere, the northerners consider themselves the more representative, genuine and important part of the common nation. Of course, the southerners hold a similar view about themselves, with the difference, however, that there is another accent in their concept of superiority. Hardly any southerners of the northern hemisphere claim to be more expansive, aggressive or powerful than the northerners of the same nation. Both parties believe that they are "the real thing," as

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far as the common nationhood is concerned. Yet what one group thinks of the other, and each of itself, varies significantly and almost constantly. Lists can be composed of what northerners think in various different countries about southerners, and *vice versa* (Ehrenfels, 1957:91). Power and strength but also roughness and egocentric inadaptability are commonly ascribed to northerners. Richness in tradition, a bent towards beauty, but also craftiness and unreliability are, on the other hand, usually associated with southerners. The typically repeated recurrence of value concept is here of importance, as also the fact that they develop in different countries under otherwise quite different local conditions. This does not mean that they are altogether divorced from the facts of reality. Yet our primary concern at present is with what people *believe* to be true, not with what *is* true.

Is the north-south situation a general trait of big-nation psychology—almost as universal as the forces of attraction and repulsion which produce polarization phenomena in magnetism, electricity and the nuclear structure of the atom? Whether we reject or affirm the validity of these comparisons, where can we look for a rational explanation?

Roughness, expansiveness and extroverted energy are popularly associated with cold climates (Ward, 1918:281); softness, an easy adaptability and an introverted disposition towards hamony, with warmer zones (Odum, 1936:11.) In the northern hemisphere cold and warm coincide with north and south. Corresponding features could, as we said, be added to the two groups of character traits; egocentric thoroughness, organizational gifts and a knack for acquiring wealth belonging to the north; idealistic inconsistency, craftiness and unreliability to the south. Here is a wide field for detailed research into popular concepts and their expression in political idealogies, literature, poetry and even in the differences of phonetics and pronunciation in the northern and southern subregions of each individual language; the stress, for example, on open vowels in the south and on sharp consonant articulations in the north.

Representative studies of India for instance (Nehru, 1946:110) or China (Lin Yu Tang, 1936:15-21), the vast work done on the American South (Odum, 1936:11; Parkins, 1938:VIII; Myrdal, 1944:44, 1466; Gunther, 1946:635-78), all refer to the north-south situation, but always as though it were a unique phenomenon of the country under study. North-south tensions are abundantly described in ancient and modern literature from the *Ramayana* to *Gone with the Wind*.

The checkered distribution pattern of northern and southern groups may give a clue to their nature and origin. "Northern"

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attitudes are not found condensed around the arctic pole, gradually decreasing as we approach the tropical belt; nor do "southern" attitudes hug the equator, thinning out gradually towards the north, in a manner comparable to the distribution of arctic or tropical species of plants and animals. Contrariwise northern and southern attitudes sort themselves out into complementary sub-regions in every country, thus conforming to ecological rules of which zoologists have been aware for a long time (Coon, 1954:200). Among animals, this internal sorting out tends to make for bigger regional varieties in the north and smaller in the south—a zoo-geographical phenomenon, known as Bergmann's Rule. Human attitudes would in this respect appear to follow a comparable line. Each large national area, whether near the pole or the equator, has a northern and a southern sub-region, Norway, Sweden, even Iceland, have each their own southern sub-regions, and Uganda or Kenya, actually extending southwards beyond the equator, have, even so, their northern sub-regions, inhabited by the brave and picturesque Nilo-Hamite cattle-herders, such as the Masai, Turkana, Nandi, Galla and others.

There are chains of neighbouring countries along the meridians, in each of which is a southern sub-region, lying actually nearer the north pole than does the northern sub-region of that country's southern neighbour: Southern Ireland if compared with northern France, southern France with northern Spain and so on in both directions. The same situation exists in southern China, which lies north of northern India, or Southern India, north of northern Ceylon, for instance. A checkered pattern of attitude-distribution thus develops. It resembles a string of magnets, laid out in lines running from north to south, each pointing its northern half towards the north pole and contrariwise. It does not resemble a uniformly increasing cluster of northern elements around the pole, or of southern elements along the equator. This is important, for it shows that there is another factor present—apart from the influence of the climate. What other factor can this be? Perhaps borders, separating one "north-south-polarised" country from another?

The consolidation of big-nation states during the last five hundred to five thousand years has produced a kind of social mobility which previously did not exist over such great areas. Mechanized transport facilities have intensified this internal mobility in recent history. People can now much more easily move within than beyond the limits of their respective countries. Following the line of least resistance, individuals with an inclination to settle towards the north will tend to do so within the boundaries of their states instead of beyond, and the same will be the case with

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people who feel inclined to move south into milder climes. The mere presence of checks to mobility in the form of national boundaries will thus make for a local concentration of northerly-inclined groups in the northern halves, and of southerly-predisposed ones in the southern sub-regions of the same large-area unit. Such, in fact, is the picture actually before us—at least in the northern hemisphere. Internal migrations within the limits of each "polarised" country, just described, in addition to the well known and of course primarily acting physiological and psychological adaptation to the climatic environment, would thus appear to be conjointly responsible for the checkered north-south pattern, as we find it.

If this hypothetical explanation is correct, a reverse picture of polarization as found in the northern hemisphere should be expected in the southern (Ehrenfels, 1957:96) in such a way that a south-to-north polarization pattern should predominate south of the equator. The example of Brazil for instance tallies with this postulation entirely (Wagley, 1949:222-58, 263 etc.). It is the more revealing because it covers an enormous territory, comparable to the USA, and has culturally coalesced since a recent past. The kind of people whom we are accustomed to regard as "northerners" are found to be "southerners" and *vice versa*. The south of the country being nearer the polar region, is the cooler, and consequently the "harder" types are found predominantly in southern regions. Conversely the "softer" types accumulate in the northern part, which, being situated nearer the equator, is relatively warmer or milder. The picture south of the equator thus shows an exact reversal of the situation with which we are familiar in the northern hemisphere. However, factual differences exist in the distribution of land and sea, as also in the age of national units there.

The world's great and ancient civilizations flourished north of the equator: India, China, the "Fertile Crescent" countries, Egypt, Greece and Rome, In the new world, too, the Aztecs, Toltecs and Mayas, with the single exception of the Incas, lived north of the equator, as did also most of the medieval and later nation states of Europe and Asia. This was so even in Africa, in the case of Ethiopia, and the kingdoms of Uganda and West Africa (Dahomey, Ashanti, Hausa and Morocco). In Africa, south of the equator, much as in Australia, New Zealand and Latin America, the present big-nation areas are all much younger. Hence, the process of sorting out south and north should here be a matter of recent growth only. This makes its study the more interesting.

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Shortly after the first publication of these hypotheses, the Swedish ELIN WAEGNER FOUNDATION gave the author an opportunity to study during 1957-58 the conditions south of the equator in East Africa.

Considering some of the smaller units north of the South African Union, there is at first the much debated Federation of Rhodesia and Nyasaland. Tanganyika lies still further north, in East Africa, and almost reaches the equator with its two northernmost extensions on either side of Lake Victoria. As a British-administered United Nations trust territory, it is free from the colour-bar and comparatively less affected by colour prejudice as such. There are easy relations between the three major groups: African, Asian and European, apart from the Arabs on the coast and in the islands of Zanzibar, Pemba and others.

Does this situation mean then that there is no south-to-north situation developing in Tanganyika? This question is of theoretical importance to our problem. The German occupation of the country until World War I resulted scarcely in the typical polarization pattern, though European farmers did begin to settle in the cool "Southern Highlands" of the territory, in small numbers. But a typical attitude towards the south has been developing among the African peoples themselves and this bears comparison with the attitude pattern to the north with which we are familiar in the northern hemisphere. This development goes back to two inter-African invasions of the area. The first took place about three and a half centuries ago; the second, one and a half. The Wa-Zimba were the first intruders. Two Portuguese, Bocarro and Dos Santos, reported of them that they had come from the south, reaching the river Zambesi between 1580 and 1589 and marching further northwards into Tanganyika under their chieftain Muzimba (Grey, 1948: 37-47). They are said to have plundered, destroyed, killed and actually eaten up every one they met, except those of their opponents whom they admitted for one reason or another into their army as soldiers. The Wa-Zimba reached the Tanganyika coast near Kilwa Kisiwani, south of Dar-es-Salaam, devouring some three thousand people. They marched further north to Mombasa with the approval of the Portuguese commander there who tried to get rid of his Arab opponents with the help of the Wa-Zimba. Still further north the same story was repeated on the Malindi coast of Kenya, but the Wa-Zimba were there attacked in the rear and apparently annihilated.

A second wave of aggression from the south was that of the Wa-Ngoni (Hatchell, 1948: 69). They had been living during the 18th century in what is now Natal. Towards the end of the Zulu king Shaka's reign there (Ritter, 1955: 105) and, perhaps,

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in part due to his aggressive policy, the northwards migration of the Wa-Ngoni has been initiated and intensified. It reached the Zambesi under the leadership of Izongondaba and extended over the Ruvuma River into southern Tanganyika and beyond. This invasion from the south determined the last phase of pre-European history in those parts of East Africa. It pushed the matrilineal Yao groups (including the Makonde, Makua and Mwera tribes) from Mozambique and Nyasaland into Tanganyika, thereby changing the ethnic situation in southern Tanganyika. The Wa-Mwera settled as the northernmost among these immigrants in the present Lindi District where they still follow a peculiar bilineal clan succession (Ehrenfels, 1955/b:577).

This Ngoni invasion started off a wider south-to-north migratory trend which, as we shall see presently, continues to this day though under different motivations and circumstances. Just before the arrival of European powers in the area, the Wa-Ngoni permeated parts of Western Tanganyika and reached even so far as the south-western shores of Lake Victoria, very near the equator. They also established themselves further south in Songea, named after a Ngoni chief.

At about the same time the Masai had pushed southwards from their north-equatorial steppes and approached the equator from the other side in Kenya and Tanganyika.

Had it not been for the appearance of the British in Kenya and the Germans in Tanganyika, the two equator-directed movements, the Ngoni thrust from the south and the Masai advance from the north, might have met on or near the equator and come to a clash there. As it was this was prevented by the European powers but another migratory movement appears to have been indirectly influenced by the two converging south-to-north and north-to-south movements here.

This is the consolidation of the composite Luguru tribe of Morogoro District, likewise a matrilineal group in the Eastern, Province of Tanganyika. Most Luguru clans derive their traditional origins from neighbouring regions in the south, especially from Iringa and the Southern Highlands. There is, however, a significant exception: the clan legend of the Mwenda. It points to a distant northern origin, perhaps as far as Kenya or even beyond (Ehrenfels, 1960). In this a parallel is palpable to the converging migrations towards the equator from south as well as north. But even beyond this and now when tribal migrations are no more possible in the old style, the south-to-north movement has not yet completely vanished from these parts of East Africa. A steady stream of Wa-Mawiha comes as immigrant labourers from Mozambique (Portuguese East Africa) in the south

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over the Ruvuma River into Tanganyika in the north. This modern movement towards the equator is no doubt conditioned by the economic situation in British administered Tanganyika, but continues at the same time the migratory trends which the Ngoni aggression had set into motion before the advent of European powers on the scene.

This originally inter-tribal and now inter-national situation in East Africa south of the equator, tends to produce a polarization picture of local culture configurations which is the reverse of that described in the preceding pages as typical for the northern hemisphere. The picture in East Africa conforms at the same time to the regional distribution trends which have been noticed in South American countries, particularly in Brazil.

The trend towards sorting out processes within circumscribed areas which has been discussed in this paper appears to be an almost universal co-function in the development of Big-Nation-Units.

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JAPAN'S SOLUTION OF HER LIVING-SPACE PROBLEM

By WILLIAM S. CRUICKSHANK

The problem of the under-nourished and backward peoples, and the under-developed lands, is no new one as some of the organisations which have sprung up since the end of World War II tend to suggest. On the contrary, it is as old as the world itself and it is only now, in the 20th century, when the world's population is increasing so rapidly, largely among the under-nourished and backward peoples, and the production of food is not keeping step with the increase of population that the problem presses on humanity and with ever increasing severity. As one writer recently put it, "It will be standing room only in many countries in less than 100 years from now."

Let us look at how Japan faced up to her difficulties. One hundred years ago Japan could have been classes as an under-developed country with the vast bulk of her people at subsistence level if not actually on the verge of starvation. Up to about 1860 Japan refused to trade or to have anything to do with the West; or to be more precise, to have intercourse or to trade with the white foreigners. Japan existed in a state of almost complete isolation—except for a modest trade with her neighbour, China, and was in a condition of complete oriental medievalism. But when Japan did throw the country open to foreign trade, her leaders, despite the obstacles raised by the all-powerful military clique, saw the possibilities of developing the labour and industrial potentialities of their country for the benefit of the people—and their own enrichment.

The progress Japan made in all the fields of human endeavour in the past hundred years can only be described as meteoric. Japan astounded and shocked the civilised world when, in the early days of the present century, she defeated in war—and forced to sue for peace—one of the leading Powers in the world—Russia. It is true that many of the warships and armaments used by Japan in that war were purchased abroad but, in most cases they were regarded as prototypes to be copied extensively. In 1912, only 52 years after, to use sporting parlance, Japan "got off her mark," she was accepted by Britain as an equal ally in any military

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adventure they might be called to embark upon. When World War I broke out Japan, if not yet a first-class Power, was a junior but important partner in he struggle against Germany. Japan's achievements in the military field need not be stressed here—it is sufficient to say that by 1940 she was in the front rank, on sea, on land, and in the air.

Before turning to the agricultural, industrial and social aspects of Japan's development let us look first at Japan as she is in 1960. Geographically, Japan is a small country of approximately 183,000 square miles (comparison; China 4,135,000, Canada 3,846,000, USA 3,022,000, Australia 2,975,000, India 1,174,000). It is when we consider density of population per square mile that the difficulties Japan had to face are brought home to us. Japan's density of population is 505 persons to the square mile (comparison; China 154, Canada 4, USA 57, Australia 3, India 304). Japan's high density figure is further aggravated by the fact that not more than one-sixth of her total territory is suitable for cultivation.

Out of a total population of 94,000,000, 16,000,000 are engaged in agriculture and fishing. How Japan solved the problem of high population density, coupled with a low area available for the production of food, is interesting. The discerning observer, on a voyage from Nagasaki to Yokohama through the famous Inland Sea, will see the answer. All the way on that voyage can be seen the hill and mountain sides cut out in shelves, one above the other, to provide fields; tens of thousands of fields, all irrigated, sometimes still by primitive manual pumps and many others by means of high-efficiency mechanical appliances. Japan has solved her food problem—but not by foreign aid.

Japan's eminence in the industrial field is well-known. By sheer industrial and commercial efficiency—and not by slave-labour and starvation wages, as many seem to imagine—Japan can compete successfully in the markets of the world; only the imposition of tariffs and quotas can keep her out. Of the total labour force available 28,000,000, or approximately 60 per cent, are engaged in the whole range of heavy and light industries; including mining, metals, machinery, chemicals, textiles of all sorts, cement, pottery, glass, timber, paper, oil refining, building and civil engineering maerials, and shipbuilding. Japan has the oldest-established and, in terms of population, the most extensive and efficient hydro-electric system in the world. Herein lies the secret to a large extent of Japan's economic success, having in mind that practically no coal exists in the country—it was to obtain coal (and iron ore) that Japan invaded and occupied Manchuria and north China before she embarked on conquests elsewhere. Japan has made full use of what nature has provided for her; a plentiful rainfall and many

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fast-flowing rivers, to produce electric power for her factories and railways as well as for domestic use.

It is perhaps the social work that has been done in Japan that will interest most readers. Let us consider a few facets. The Japanese are perhaps the most highly disciplined people in the world. This is not because discipline is imposed upon the people by regimentation from above. The people like it; they know that discipline is good for them individually and for the nation at large. Spitting in the streets is unhygienic; throwing litter about is untidy; smoking in places where smoking is prohibited is not done. The Japanese do none of these things; they discipline themselves not to do so.

Traditionally, Japan has always been an extensive employer of female labour in industry. In order to attract young mothers back to work in the factories, day nursery-schools are provided in most establishments of any size. These were set up more than a quarter of a century before similar schools were established in Britain and the U.S.A. In the day nursery-schools the women workers leave their children to be looked after, fed, amused, educated and given medical and nursing attention if required. This service is free to the workers; it is an oncost borne by the management.

For many years one of Japan's major problems has been to keep her ever-increasing population in check. She has never had much room for expansion—and she has less than ever now that she has lost her two former colonies of Korea and Formosa. Some years ago a nation-wide birth control campaign was embarked upon, backed by the government; the basis of the campaign was an appeal to common sense, the emphasis was on quality and not quantity of population. The appeal was completely successful. Japan's births per thousand has been reduced from 35 per thousand to 17 per thousand, which compares favourably with the birth-rates of the enlightened nations of America and Europe. Japan's death-rate per thousand has been brought down to 8; which is the lowest in the world. The low death-rate is due to a highly organised health service coupled with a strong sense of personal and public hygiene.

One problem in most countries is the age-old one of prostitution with its many resultant evils, including venereal disease. Japan tackled this problem with her usual thoroughness and now prostitution in her streets and other public places is all but unknown. It is true that there is prostitution in Japan but it is controlled. Recognising that "the oldest profession in the world" cannot be put out of existence by police warnings, petty fines and short terms of imprisonment, Japan some years ago established under State control a system of licensed public brothels called Yoshiwara

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and made public prostitution a criminal offence punishable, on first conviction, by a long term of hard labour. By facing up to facts, Japan, by her Yoshiwara system achieved two results which cannot be matched anywhere else in the world. Japan reduced prostitution to its smallest possible dimension and almost completely eliminated that evil thing which, not many years ago, was the scourge of Japan—venereal disease.

Some 50 or more years ago Japan obtained from abroad the services of professors and teachers in every branch of the sciences and arts. The job of these men was to teach the future professors and teachers of Japan. Now all schools, colleges and universities are staffed entirely by Japanese. Even teachers of the English language are Japanese and, in this connection, it must be borne in mind that English is the second language of Japan—it is safe to say that for every white foreigner who speaks Japanese there are 100,000 Japanese who speak fluent English.

Another point that impresses one is the stress the leaders of Japan have put upon purity of race. Marriage between white foreigners and Japanese is taboo (it is true that just after the last war a few Japanese girls did marry American and British servicemen) and even marriage between Japanese and Chinese, Koreans, or Tibetans—and all these peoples have certain similarities —is frowned on. Perhaps a lesson can be drawn here by people of the "we are all of the human race and all equal irrespective of the colour of our skins" mentality who see nothing wrong—and nothing but popular Press front page romance—in marriage between whites and coloured people.

Summarising, therefore, the way Japan has overcome her astonishing difficulties presented by a large population in a restricted environment, with few natural resources, we can say that they have been by:—

(*a*) the fullest use of all technical assistance of more advanced countries.

(*b*) hard work.

(*c*) control of the increase of population.

What Japan has done in the past 100 years to make herself one of the leading nations in the world and her people probably the happiest, and certainly among the best fed, dressed and housed in the world can be done, in a similar or lesser degree, by the other backward nations of Asia and Africa. But the result cannot be achieved by the whites of the world giving doles in the form of food, loans which will never be repaid, and grants. What is wanted is technical guidance and educational help; the rest must be left to self-help within the backward nations themselves.

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THE EVOLUTIONARY BASIS OF RACE CONSCIOUSNESS

By D. PURVES

In any discussion of racial questions it is always necessary to define what is meant by the term "race," a term which has been deprived by common usage of any precise meaning. The use of such expressions as "Scottish race," "British race," "White race" and "Human race" has rendered the word so unspecific that it can no longer be used without qualification. In the context of this article, "race" is taken to mean any group of individuals all the members of which possess a number of easily recognizable physical characteristics specific to that particular group. This is to say that such groups as the Caucasoid and Negroid and the South African Bushmen are considered as races for the purpose of this discussion. Since all these groups are able to interbreed to produce fertile offspring there are some grounds for regarding them as not belonging to different species but as being separate sub-species of the one surviving species of genus homo.

What this article is concerned to do is to show that feelings of race-consciousness or reluctance of one sub-species to intermarry with another, have their roots in man's prehistory and that these feelings have a biological function. This is to say that a man's love for his country, or at a more prosaic level, his willingness to identify himself with the interests of his social group, do not arise fortuitously, but these are instinctive feelings rooted in man's nature. Because of their instinctive character, these feelings, being independent of transient social conditions, can never be eliminated by any programme of conditioning designed to eradicate race consciousness in the schools.

My argument requires that we should go back to consider the views of Charles Darwin whose fundamental contribution to Biology can be compared to that of Isaac Newton in the physical field. In his book, *The Descent of Man*, Darwin laid the foundation of our modern knowledge of man's origin. In this work, Darwin made it clear that he believed that the prehomonoid ancestors of man had lived in tribal groups and that the process of natural selection must have applied to small tribal units rather than to individuals. This is what one might expect by implication

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from the fact that both the primitive men still surviving in the world and the anthropoid apes still live in tribal communities.

These ideas have been greatly developed by the late Sir Arthur Keith in his book, *A New Theory of Human Evolution*, which was published when the author was over eighty years of age. The conclusions arrived at in his book are the result of a lifetime of study in this particular field and although they are of considerable sociological and political importance, they have nevertheless received very little public attention.

Keith's views were, in essence, that the basic unit in human evolution was the tribe and that the tribal groups of our ape-like ancestors were kept virtually in isolation from each other, not so much by geographical barriers as by the nature of man himself. He considered that group consciousness within the tribal unit was associated with a dual code of morality. There was one morality governing conduct towards members within one group, designated the code of amity, and another code for conduct in relation to members of other racial groups, designated the code of enmity. This is to say that in primitive tribes, sympathy was normally reserved solely for members of the tribe, and that primitive man regarded actions as good or bad according to how they affected the welfare of the tribe—the whole species did not concern him. Thus for our primitive ancestors, while it was wrong to show ferocity or ill-will to fellow members of the tribe, since this kind of disruptive behavior might endanger the tribe's chance of survival, it was right to exhibit ferocity and ill-will towards members of neighboring tribes which might compete for the tribe's territory.

Keith's theory, therefore, stresses two mental factors at work in the evolution of man. The one is the urge to co-operate within the group, the expression of the code of amity, and the other is the urge to compete, the expression of the code of enmity. It is evident that both these urges or instincts could have an important evolutionary function, for when two groups of primeval men came into competition, the group including the greater number of courageous, sympathetic and faithful members would tend to conquer and displace the other, since it was better organised within itself. Thus competition must have constantly favoured those tribes which were rich in co-operative qualities.

This type of dual morality is still found in some primitive communities where the normal response to strangers is immediate hostility, often involving the murder of intruders. Once a stranger is accepted by one of these communities, however, the other morality is brought into play and he usually finds himself very kindly treated.

Although modern man has abandoned the tribe as a unit of

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social organisation, the instinctive feelings associated with the tribal behaviour pattern are still part of his make-up. Although these feelings are usually modified in their expression we can still recognise them at work. We are, for example, to a varying degree, slightly suspicious of strangers. Even when our reason tells us that they are members of the same community and that there is no logical reason for suspicion, we are generally more inhibited in addressing a complete stranger than someone with whom we are thoroughly familiar. Such feelings are difficult to overcome because they are a survival into the present of feelings which at one time had an important evolutionary function, and which in Keith's view, still have an important part to play in man's development.

If one looks at the contemporary scene, it is evident that man has come a long way since he was organised in tribes. Except in certain backward regions of the world, the present units of political organisation have become the nation and the multi-national state, as a result of a long process of conquest and assimilation of some tribes by others. Although these larger groups are much more complex forms of social organisation than tribes, it appears that the instinctive feelings originally associated with group consciousness at the tribal level have been retained by modern man, and are now operating at the present higher levels of social organisation, notably at the national level. It is these feelings which provide the driving force of nationalism—which are the cause of all wars and which are at the same time necessary for the cohesion of any social group. We cannot exist as social beings without these feelings since they are basic factors in our motivation and part and parcel of our nature.

Now while it is possible, although often difficult, for members of one social group to accept and absorb members of another social group who are visually indistinguishable from members of the parent group, an explosive situation is created when members of different races (or sub-species) are mixed in the same community. In such a situation the society cannot formulate the group consciousness on which its cohesion depends, because a proportion of its members automatically provoke in the majority the primitive response appropriate to the code of enmity. The underlying biological reason for the resulting hostility is that each group is endangering the genetic integrity of the other.

In this connection, it is of some interest that in such a mixed group, feelings of antagonism are not so noticeable between children of different races (unless they have been indoctrinated by their parents) as between mature adults. It seems reasonable to suppose that the reason that feelings of antagonism arise after

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puberty is that such feelings have a biological function which is only served after that age, namely, the prevention of interbreeding. This is borne out by the behaviour of Whites in the Southern States of the U.S.A., who are often kindly disposed to negroes but tend to go berserk against those suspected of physical relations with Caucasoid women.

There is ample evidence to indicate that social instability is inevitable whenever attempts are made to create multi-racial communities, and a number of apparently insoluble situations already exist in Africa and the United States. In view of the instinctive character of the antagonisms inherent in the multi-racial community, there appear to be good grounds for preventing the establishment of communities of this kind in the future and for attempting to solve the problem of the existing communities by resolving them into separate societies on a racial basis. However harsh the application of such policies may appear to be, they do provide the possibility of social harmony and friendly competition between national groups in the future—the alternatives are permanent instability and exploitation of one racial group by the other indefinitely prolonged.

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ANTHROPOLOGICAL MAPS OF NORDIC COUNTRIES, by Bertil Lundman, Cold Spring Harbor Symposia on Quantitative Biology, Vol. XV, 1951.

UMRISS DER RASSENKUNDE DES MENSCHEN IN GESCHICHTLICHER ZEIT, by Bertil Lundman, Copenhagen, 1952.

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Book Reviews

Journals and Reviewers differ so widely in practice as to whether reviews are signed, initialed or anonymous that there is no unanimity as to what should be the practice. Consequently, the Editor has left the matter entirely to the reviewer, except in such cases where the review may be of a highly critical nature, when he feels that it should be initialed or signed.

Among the books sent for review have been the following from the Readers' Union, 38 William IV Street, London, W.C.2. The prices quoted are those of the standard edition, and those preceded by RU are those charged by this organisation to its members.

STILL DIGGING, by Sir Mortimer Wheeler. Pp. 240; 8 plates. Joseph, London, 1956. 15s; RU 5s 6d.

THE TESTIMONY OF THE SPADE, by Geoffrey Bibby. Pp. 448 32 Plates, 19 Maps. Collins, Glasgow and London, 1959. 30s; RU 12s 6d.

MAN ON EARTH, by Jacquetta Hawkes. Pp. 256; 9 plates. Cresset, London. 21s; RU 9s 6d.

All these books are well produced by first class publishing houses, and, quite obviously, they are extremely cheap at the prices charged for them by the Readers' Union to their members. Needless to say they are all worthwhile books.

STILL DIGGING

By Sir Mortimer Wheeler

This book is an autobiography of a well-known archaeologist, who as a man has shown himself to be not only a scholar of the highest repute but also as a soldier, and a man of action as well. It is a little unfortunate that his first chapter entitled Boyhood in the Provinces starts with his earliest memories in Edinburgh, the Scottish capital, before his father moved to Yorkshire in the English Provinces, where, it is true, his real boyhood was in fact spent. Sir Mortimer Wheeler's ability for action, which is not always found in the scholar, may be traced to his journalist father who, although denied the active outlook in life, appears to have had a thirst for action, and unbounded admiration of men who did things. The author's troubles in India, dealing with the accusations to which he was subjected, or as the receiver of allegations about others, is still one fears, not unknown at the present time. However, for anthropologists the main interests will lie in his account of many aspects of archaeological investigation, including the prehistory of India.

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THE TESTIMONY OF THE SPADE

By Geoffrey Bibby

This is an extremely well-written book. It describes the general development of pre-historic archaeology from stage to stage in the past. From each discovery which it discusses, with the personalities involved in it, and the stage of knowledge in each instance, it goes on to discuss the relevance of such discoveries and theories in the light of our widening knowledge of early man and civilisation from the earliest palaeolithic up to the end of the pre-historic period.

There are several features which are very well handled indeed. Particularly is this so in connection with the position of Cro-magnon man in relation to the Magdalenian civilisation towards the end of the palaeolithic, and the relationship of this to the early Aurignacian.

One may have some reservations, however, concerning the author's identification of Cro-magnon man with the Nordic. In all his appearances Cro-magnon—in stature, in heavy skeletal structure, the heavy jaw, the depression of the brow over the eyes, and the rather deep upper lip, —he is typically Atlantic or Faelic by race. It is significant that one of the few cave paintings which shows the colouring of Cro-magnon man indicates that he has exactly the same combination as is typical of the Atlantic race, namely blue eyes with dark hair. The Atlantic race is probably a Western and less-specialised branch of the common stock out of which both that race and the Nordics have evolved. It is therefore, undoubtedly, a near relation of Nordic—but it has yet to be shown that the Nordic was, at this time, anywhere in Europe at all—although we are quite aware that it is usual to assume that he was. With the great, relatively unexplored areas of Russia still to be opened up to anthropological investigation, and in view of many factors which would point in that direction, it is probable that at the time of the Old Stone Age, Nordic man was largely in process of development east of the Urals, rather than in Europe.

The author's reference to the earliest northern cultures as linked to those of the Eskimo in Greenland and beyond, is well worth noting. Sollas, long ago, drew attention to the characteristics of Chancelade man, and pointed out Eskimoid characteristics. It seems quite clear that all along the ice face there were branches of the Caucasoid race which had specialised themselves for a life of austere Arctic conditions. As the ice retreated they followed the game and so reached the Arctic. Here there is no doubt they mingled with Mongoloid stocks as they moved eastwards, and as a consequence of this we get a continuity of culture which is clearly related to that of Northern Europe at the end of the Ice Age, and during the retreat of the ice, although the resultant racial types today may show little or no evidence of the Caucasoid elements which founded the original cultures.

The weakest part of this book, as might be expected, is on the ethnological side, which the author does not deal with to any great extent. He discusses the coming of Asiatic and African stocks into Europe of Neolithic and later times, but such terms are of very little advantage or value, since the African stocks of those times were towards the west Atlanto-Mediterranean, and towards the east Mediterranean, with even Mediterranean-Nordic elements, while the Asiatic immigrants were Nordic, Alpine, Dinaric, and of other Caucasoid strains. Again, he assumes considerable racial mixture in various later civilizations—which is only

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a relative term, since all were Caucasoids. It is also a great danger of our time that archaeologists are often prepared to interpret ethnology on the basis of the distribution of pot sherds and stone implements. A change of culture does not necessarily mean any racial change. Some, also, would doubt very much his justification in likening Gordon Childe to Worsae or Montelius.

However, as we have said earlier, this is a very useful book and well worth while commending, with much information of use to all ethnologists.

MAN ON EARTH

By Jacquetta Hawkes

This is a popular, well written, and easily read book. It is eminently sensible in its questioning of some aspects of orthodox evolution, in which it is no doubt justified, as there are often many things taken for granted, and theories erected on superficial evidence. For instance, it is easier to classify on a basis of continuing divergent evolution than, say, on a parallel evolution. The writer sees a purpose in evolution, and man's present station as one which has not been arrived at by chance.

There are some points which we believe cannot be sustained, such as that Neanderthal man was a retrogression, which is due to the authoress's acceptance of the concept that all types of men now are of one species, and therefore that Neanderthal succeeding more advanced types must be a retrogression—whereas the evidence is more economically explained on the basis of this being a parallel species which diverged more and more into a blind alley, while other types fairly closely related to Neanderthal went on, probably to found some of the Melanoids of today. The more advanced types which preceded Neanderthal were probably ancestral of some of the other specific stocks, such as the Caucasoid or the Mongoloid, and not necessarily ancestral to either Neanderthal, or the ancestors of the Melanoids.

The extermination of Neanderthal, on which the writer speculates, is not unreasonably accounted for on the basis of the inherent antipathy between rival groups, and, in the most primitive times, the complete destruction of the weaker group, and where, by any chance, that fate was escaped, by the reduction of sources of food for the defeated, and consequent malnutrition and disease, supplemented by the spread of infection from a more numerous dominant strain to the weaker, and already weakened, one.

The suggestion that the existing races arose, as a consequence of the isolating effects produced by the growth of forests succeeding the retreat of the ice, at the end of the Ice Age, seems on every ground to be without foundation, and the major stocks would appear to have already emerged in much their present forms by then, while, already in the Cro-Magnon man, for instance, whose colouring even seems to have combined dark hair with blue eyes and light complexion, we have the forerunner of the dark haired, blue eyed, light skinned, Atlantic Race of the western seaboard of northern Europe.

The writer suggests that in man's unconscious he carries the inheritance of his ancestral history—in other words, presumably, that the accumulated experience as it works out in inherent ability, emotions and character, is of an hereditary nature.

In a long list of liquors made by early man, the authoress has missed

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out mead, the most important of all, and the one which was the principal drink of the Caucasoids, certainly of the Aryan-speaking branches, before agricultural settlements had been developed in the Mediterranean and near eastern lands. Indeed wine is the substitute for mead, and mead was considered to be the principal giver of life known to early man.

The writer's reference to olive-skinned beauties of pre-dynastic period in Egypt may be taken with some reserve. That these peoples were Caucasoids there can be no doubt, but that they were entirely of the darker, swarthier varieties is by no means to be taken for granted.

With some reason the ideas of modern rationalists that priestcraft imposed a tyranny on the peoples of the ancient civilizations are rejected in favour of a spontaneous growth of religious thought and life.

The writer draws attention to the differences to be found in art. organisation of society, and in the types of portraiture in sculpture depicted in the contrasting peoples of Egypt and Sumeria, and ascribes this to the wonderful diversity of the human genius in the mould of the different environments. While the factor of environments is certainly involved, what is basic is that the sculptures clearly indicate in the Sumerian the Armenoid racial type, and in the Ziggurats the type of architecture of a people whose ancestors came down from the mountain systems of which Armenia is a part, while in the Egyptian we have a people who appear to be Mediterrano-Atlantics, with even some Nordic traces.

We are entirely at one with the writer when she points to the great danger to the world due to the vast increase of populations, and she draws attention to the fact hat there is not a proportionate increase of genius and ability commensurate with such increases, while, furthermore, vast numbers involve the need for control, and so a consequent loss of freedom occurs. It is a pity that more cannot write today "that while each society must strive to maintain equality in justice and in opportunity for rising to the fulness of human life, the pursuit of equality for its own sake has no virtue and much evil."

This is a worth-while book for scientist and layman alike.

R. G.

EAST ANGLIA

By R. Rainbird Clarke. *Pp.* 240, 60 photographs, 30 line drawings, 5 charts, 13 maps. Published by Thames & Hudson, London, 1960.

This book is written by the Curator and Keeper of the Archaeological department of Norwich. It is a competent work dealing comprehensively with East Anglian archaeology and includes new discoveries which have not been recorded before as well as giving an account of older finds which it examines in the light of modern research.

It is well written, well illustrated, beautifully printed, with first-class maps and diagrams, and is obviously the type of work which should be on the bookshelves of all interested in early man from his first appearance, in this case in East Anglia, in the Clactonian, right through the whole of the pre-historic period to Roman, and ultimately late Saxon and early mediaeval times.

It has a valuable list of important visible monuments in East Anglia and is supported by a good bibliography.

N.

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WORLD WITHOUT END

By Roger Pilkington. Macmillan, London, 1960. Pp. 165. 12s 6d.

This book by a geneticist is on Christianity. Anthropologists busy themselves frequently with primitive religions, some of which where they concern other stocks than the Caucasoid may have much less relevance to modern European society than they think, when we consider the great difference in time, specific divergent development, and space, separating these primitive peoples from the White races. It is a change to have a discussion of a higher religion. Dr Pilkington's exposition is, in fact, an *apologia* for Christian belief, even in terms of science, and he makes out a strong case.

In dealing with the Genesis account of creation he appears to assume that the 'firmament" is "that strange crystal dome vaulting over the sky." In fact the concepts of early Genesis are closely related to those of ancient Aryan cosmological thought, and the firmament is rather that air space between the earth below and the waters over the earth, on which the Sun rode or sailed.

He fully recognises the part of heredity, and its mechanism, in man's mental and spiritual conditions, and does not deny that a mathematician's ability is due to his heredity. But he sees nothing inconsistent between the mechanism of evolution and the nature of the earth and living things, and belief in Christianity. In this he no doubt has the support of more than one scientist.

RACIAL PROBLEMS IN SOVIET MUSLIM ASIA

By Geoffrey Wheeler, Institute of Race Relations. Oxford Press, London, 1960. Pp. 66, 2 maps. 6s.

This is a factual account of the recession of Mongolian ("Tatar") power from Russia, and the subsequent expansion of the Russians to the east, and their domination over native peoples in Russia's colonial territories. The writer draws attention to the fact that contiguity to Russia proper itself by continuous land connection (instead of separation by sea) and the fact that there have been large settlements of Russians in these lands has made for quite a different arrangement between Russia and her colonies than that which occurs between Western European countries and their colonies.

Uprisings against Russia as late as 1937 have been claimed by the Russians as the work of the British, and since 1945 that of them and the Americans!

Over half a million Muslims were deported from their home lands by the Russians on the ground that they had collaborated with the Germans in the late war.

Nationalist movements for independence from Russia are, apparently, denounced by Russia as *bourgeois*, while self-determinism is recognised only when it is directed against "feudal capitalist and imperialist states."

In order to prevent the consolidation of Muslims in her colonies Russia has divided Turkestan up into tribal states.

The author says "the Soviet nationalities policy appears simply as a new and materially more efficient form of colonialism."

Nine-tenths of the Muslims in the U.S.S.R. are Turkic. The next

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group is Iranian, who account for about a million people, and who were the original inhabitants of Russian Muslim Central Asia.

The Turkic are classified as Mongolians. All the peoples of the six Muslim republics have strong affinities with neighbouring peoples outside of Russia. Into this region the Russians are settling colonists of whom there are seven million to date. Russians form a disproportionately large proportion of official representatives of these Muslim republics.

Russian policy appears to be to Russianise the culture of the Muslim population, while at the same time destroying Islam. Her linguistic policy is to develop local languages, presumably to prevent any Mongoloid *lingua franca* from developing as a nationalist vehicle in opposition to her policy of Russianisation.

It is of interest to note that the Russian settlers in the Muslim republics have their own segregated collective farms, and live in "European towns" apart from the native quarters. Russian and Mongol appear to live apart from each other.

In view of the Soviet support for desegregation and miscegenation elsewhere, it is interesting to observe that there is practically no racial intermarriage between the Russian colonists and the natives.

Tribal and clan systems of the Muslims appear to be strongest where Russian colonisation is strongest.

THE HANDLING OF CHROMOSOMES

Revised and enlarged third edition. By C. D. Darlington and L. F. La Cour. Pp. 248, 24 plates. Allen & Unwin, London, 1960. 30s.

This is a revised and enlarged edition, brought up to date and expanded to include the advances since the original simple work, which was designed to enable teachers to demonstrate chromosomes to pupils and university students, was first published in 1942. This is the kind of work which represents considerable drudgery in compilation, in order to place in the hands of students and research workers alike in a useful compendium, in small space, and simply explained, all the necessary techniques and equipment necessary in handling chromosomes. The main sections of the book deal with Equipment; Living Chromosomes; Bulk Fixation; Smears and Squashes; Paraffin Methods; Staining and Mounting; Special Treatments; The Control of Mitosis; The Control of Fertilization; Photography; Autoradiography; and Describing the Results. In addition there is a series of appendices—Sources of Material; Standard Solutions; Schedules of Treatment; Catalogue of Implements; and Abbreviations. It is self-evident that it is a useful and necessary book for all practical work in connection with the study of chromosomes.

APPLIED GEOGRAPHY

By L. Dudley Stamp. Pelican Books, Penguin, Harmondsworth, Middlesex, 1960. Pp. 208, 38 text figures. 3s 6d.

Chapters are devoted to The Human Environment, Land and People, and The Geographical Study of Population, all of which are of anthropological relevance. Professor Stamp rejects the Geographical Determinists who seek to show that man is controlled by his environment, and that in fact man can change his environment under certain circumstances. Like

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many geographers, however, he does not appear to have a firm appreciation of the influence of heredity in predetermining man's development in relation to his environment, and to time's accumulation of experience, which is history.

His chapter on Land and People is worth reading, and thought provoking. His preference for giving statistics in this connection in terms of man rather than of men to the square mile, is good—and it certainly means much more to be told that if all the land of the world (arctic and desert, with cultivatable land) were shared out it would amount to 12½ acres per person; or if habitable land only is considered it is about 4 acres. If the American population is taken in relation to all land available, it amounts to the world average of about 12 acres, if Alaska is excluded from consideration; but when habitable land is considered it falls only to 6 acres, as against the world average of 4 acres. This indicates how strong is the position of the U.S.A. in relation to the rest of the world. Continued, rapid increase, however, of the American population will lose her that advantage which she enjoys at the present time. India, on the other hand, has only 2½ acres per head, and when reduced to land actually in use comes down to 0.75 acres. This means, added to the constantly increasing population of that sub-continent, that India is quite incapable of maintaining a population at anything approaching a sufficient standard of well-being.

In the same statistical terms France has 3.4 acres per head, and 1.2 cultivated: Italy 2.5 and 0.8 respectively: while in the case of England, Scotland and Wales 1¼ acres per head and 0.55 acres respectively are the figures. Japan has 1¼ acres, but since so much is mountain, and impossible of cultivation, the resulting figure of cultivable land comes down to 0.15 acre per head.

MAN: DIVINE OR SOCIAL

By Arthur Guirdham. Vincent Stuart Ltd., London, 1960. 27s 6d.

The scope of this work covers: the Higher Consciousness; Cosmic Factors in Birth and Infancy; The Dual Urges; Perception and Ideation; the Nature of Memory; A Criticism of Theories Based on the Instincts; and The Inheritance of the Herd-Personality Urge.

This work illustrates in places the weakness of theorising in the absence of an adequate groundwork of ethnological knowledge, which is probably the fault of most works bearing upon sociological studies of one type or another in our times. The author, for instance, denies that the diminution of self-assertive tendencies in India compared with those of Europeans is due to heredity. What is overlooked is that if, as one has reason to believe, the Nordics and Dinarics are prone to self-assertion, then the greater proportion of their elements in Europe alone would allow for a differential incidence of intensity of self-assertiveness. In addition, in such a country as India, the environmental conditions are not conducive to the survival of the over-energetic in any racial amalgam, while it can be quite deleterious to the Nordic and Dinaric strains.

The author lays a stress upon the place of religion in the whole man. When we realise that from the awakening of the minds of men at remote periods, to all branches of men at the present time, religion is inherent in the civilizations which man has created it is self-evident that its denial is as destructive to the well-being of man as is the denial of the expression of other inherited traits.

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Dr Guirdham shows evidence for rejecting the views of the behaviourists who claim that personality is due to the influence of environment—and he goes on to argue that the personality is inherited, and cites that cases of monozygotic twins. He adds: "In considering the question of how personality is built up too much stress is laid on the environment. We cannot deny its importance but the modern idea that given a good environment a good personality will result is a sad example of this age's veneration for ideas and its almost primitive incapacity for common observation.... Man is regarded as the end product of fixed environmental pressures on more or less malleable material. Whether they know it or not the attitude of these gentlemen is sociological and political and reflects the spirit of the times we live in."

The writer draws attention to infant prodigies as evidence of inheritance of personality since they cannot be the result of training and environment.

While arguing that the impulse to personality is inherited the author denies that what we call the instincts are. They are, for him, merely psychological trends useful in the description of human behaviour. Whether we can follow him or not in such claims the fact that he so strongly emphasises the inheritance of personality must be of interest to all anthropologists.

FRONTIERS OF SCIENCE

Edited by Edward Hutchings, Jr. Pp. 362. George Allen & Unwin, London, 1958. Price 25s.

This book consists of 35 "research reports" by experts in their various fields. Among those of particular interest are the chapters in The Biological Sciences section, and which include chapters by Norman H. Horowtiz on The Origin of Life; A. H. Sturevant on The Genetic Effects of High Energy Irradiation on Human Populations; Henry Borsook on We Could Feed the World; and Sir Charles Darwin on Forecasting the Future. A little more remote, in the section of Physical Sciences, but not without its interests is a chapter by Frank Salsbury on The Inhabitants of Mars. Under Science and Society there are chapters on The Place of Technology in Civilization by Fred Hoyle: The Relation of Science and Religion by Richard P. Feynman.

Such a book is of value in giving under one cover a wide range of subjects in their most up-to-date guise, and one of the things the scientific specialist requires are such books to keep him abreast of changes of thought in other fields of science than his own.

It is, however, surprising in view of the great developments in relation to the scientific nature of man, and the fact that man's heredity is probably the most important single phenomena in relation to man, past and present, and his projection into the future, that that aspect of science is not dealt with at all. One is left with the feeling that heredity in man, and its implications, have been carefully avoided by the editors and the writers whom they have chosen. It is true that Fred Hoyle in his article on The Place of Technology in Civilization makes an essay into pre-historic anthropology, with some disastrous results. His very premises on which he starts, in an illustration he draws from history, shows defects in its assumptions. He writes: "But by now we can see that present-day society would hardly be any different if Napoleon had never lived." Had Napoleon never lived it is doubtful if mass conscrip-

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tions, and so total war, would have occurred among European nations: had he not lived to command a Revolutionary and Aggressive France it is doubtful if the Revolution could have survived, as there would have been no one to organise it in the way he did, and to canalise it into an Imperial power. Without him it might well have burned itself out, and the old regime would have been restored, and France today might well have been a Monarchy. Without Napoleon there would not have been a Code Napoleon, which has been exported all over the world to countries—even such as Japan. Without Napoleon there would not have been the massive patronage exercised by Prime Ministers through decorations for alleged merit, ranging from 5th to 1st class grades—as this was revolutionary and would have been resisted under normal circumstances by the established noblesse to whom alone orders of chivalry were open on the basis of birth and Christian profession. How, when we look upon the many fields in which the genius of one man (good or bad) has affected life, the writer can make such a sweeping assertion that "the political and military disturbances that he produced were transitory and did not have a lasting effect. They have averaged out to zero" is quite staggering. From these premises he goes on to recite the various stages of man's development from the early Stone Age, and when he comes to explain the downfall of Rome as due to an anti-democratic aristocratic society, which deprived the workers of the means of living, and that this in its turn caused a decline of population all of which was carried over into the feudal period of Europe, he is once more simply plunging with sublime ignorance into a field of which he appears to be grossly ignorant, and, thereon, raising a fabric of theory whose values may be judged by the premises on which it rests. The Roman aristocratic government, as represented by the Patricians, decayed early as new men rose from the people to become the Equites or Knight classes, promoted on a basis of "merit" and so Roman, in a broad generalisation, can be said to have passed from a feudo-tribal way of life in which the patricians were the aristocracy, into a society of a more or less capitalist structure. Coincident with this if there were any development of shortages for the people it was not due to continuing aristocratic dominance but rather the reverse. The decline of population was not, in any case, so far as can be judged, due to any shortage of food among the masses, but entirely a phenomena largely restricted to the upper classes who failed to reproduce themselves (perhaps largely due to luxury and self-indulgence). As these were the classes which (with foreign levies and allies) maintained the army, this was an essential factor in the ultimate military collapse of Rome. In the feudal structure we have the conquest of much of Europe by northern peoples, and arising out of that the division of society into the militairy or free classes and the agriculturists and traders on the other hand. The former were not the over-oppressive element depriving the masses of the means of livelihood which the writer tries to show, for had they been they would have extinguished the economic prosperity on which their own survival depended. Mediaeval feudal society was based on a system of inter-dependence, which simulated in many respects the "welfare state" of modern times, and its static qualities arose from that very fact. Furthermore, in such a society while all were liable to epidemics from plague, only the military classes (freeman to lord) were liable for military service and its hazards. The masses were therefore, in respect of war, better off than they are today when in most states they are liable to conscription.

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Dr Hoyle would have been better advised to have restricted himself to that which he knows something about, and in which he is no doubt extremely efficient, the field of astro-physics, and left anthropological and historical ethnological problems to the interpretation of those who have studied them. However, he is not the only sinner in this respect. There never was such a time as this when to be an expert on something else seemed to be a qualification for making ponderous pronouncements upon racial questions.

John S. Stamm, in his article on Hoarding, establishes that the degree of instinct in hamsters and rodents towards hoarding varies according to genetic factors—from which conclusion it seems to be difficult to escape the conclusion that saving and conserving qualities in human beings must also be related to heredity. There is an article on the currently topical problem of The Genetic Effects of High Energy Irradiation of Human Populations by A. J. Sturtevant.

There is a first rate thought provoking article on Forecasting the Future by Sir Charles Darwin, which realistically faces the problems involved in present over-population and continued increases in population, which have been made possible by increased technological progress on the one hand, and the opening up of new lands, but which era is likely to come to an end—with the resultant Malthusian controls established again. Dr Fred Hoyle in an essay under the same title challenges the views of Sir Charles Darwin. The weakness of his argument is that he does not face up to the fact that the increase of population is coming in the main from Africa and Asia, regions of extremely low standards of living, and in many instances of education and understanding also. It is, therefore, unlikely that the factor on which he relies to check rising population—high standard of living, and a desire not to have it dissipated by too many children—can ever become operative.

R. GAYRE OF GAYRE.

MAYA, THE RIDDLE AND REDISCOVERY OF A LOST CIVILIZATION

By Charles Gallenkamp. Frederick Muller Ltd., London, 1960. Pp. 219, 65 photographs and text figures. Price 25s.

This is a well-produced, well-illustrated work by a specialist in an easily understood presentation—so that it gives in one volume a grasp of the rise and development of the Mayan civilization.

For the anthropologist, in particular, there is a chapter on early man in America. One of the astonishing things about Central American archaeology is the close parallel, in so much, in the development of those copper age civilizations with those of the old world—and, at the same time, the astounding differences. Thus there are pyramids with tombs in them, there is a profound knowledge of astronomy and mathematics, including the use of zero, and at the same time there is neither the wheel, nor draught animals nor the plough. Even the bow is late.

The evidence clearly indicates that these Amerinds—distantly related to the Mongoloids—underwent a cultural development parallel to that of other stocks in the Old World. However, some occasional transmission of cultural traits from the Old World to the New cannot be entirely dismissed. The Mayan with his long nose, as many North American Indians with theirs, poses a problem in itself. Was this due to an unusual development in the Mongolo-Amerind stocks or is it due to the infusion at

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some point of time of some Caucasoid strain, which by natural selection or chance segregation came to dominate whole tribes of Amerinds? We must not overlook the probability of European contacts in the Bronze Age by Atlantic folk whose civilisation was primarily based on a use of stone rather than a lavish employment of metal. Such would account for Central American legends of White people from the east.

The archaeological evidence (briefly recited by the author) supports the anthropo-geographic distribution of mankind, by indicating a spread of the Amerinds in America from Asia.

N.

KALAHARI

By Jens Bjerre. Published by Michael Joseph, London, 1960. Pp. 227, 28 illustrations.

This is a good, interesting, and useful book on the life of the Bushmen among whom the author lived in South West Africa.

He poses many of the problems provided by these people, with their yellowish skins, clearly Mongoloid forms of face, and quite un-Negroid features—at any rate among those who are furthest away from the Negroes, both in type and distance. While it is usual nowadays to discount the Mongoloid association of the Bushmen, and to try to work out an entirely independent evolution in southern Africa, there are many features which are not explicable on that basis, apart from the traits we have mentioned. Among these is also the fact that their speech, with its clicks, also depends upon musical intonations for meaning, just as is found in many Mongoloid languages. Concerning the Bushman speech the author says it is almost impossible for an adult European to master the language, for many of the clicking and grunting sounds employ quite different vocal chords and muscles. Even the stomach and chest have to be employed in their production.

There is a description also of the Bergdamas, a non-Bushman people who have forgotten their own language and speak a rudimentary Hottentot, probably because they appear to have been a slave people of the Hottentots. But among the non-Hottentot words they use are some which resemble those of the Sudan negroes. In addition they are black-skinned—all of which suggests an origin from the equatorial zone much further north. Consequently, it is not only the Bushmen themselves who present considerable ethnological problems as to their origins.

The author says the mythology of the Bushman is richer than that of the Negro, and that, primitive as he is in way of life and distance from us, his ways of thinking are closer to those of the European than are those of the Negroes.

THE INDIVIDUALITY OF PORTUGAL: A STUDY IN HISTORICAL-POLITICAL GEOGRAPHY

By Dan Stanslawski. University of Texas Press; Thomas Nelson & Sons Ltd., Edinburgh, 1959. Pp. 248, 28 Photographs, and 15 Figures and Maps. Price 30s.

This is a first class anthropo-geographical account of Portugal, not only in its own geographical setting, but within that of Iberia, and of Western Europe also.

The work deals with the period from the retirement of the Magdalenians (Cro-Magnons) northwards at the end of the Ice Age to the

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formation of the modern historical state of Portugal, and shows the interaction of geography and race (and with that the associated cultures).

Such a study raises many interesting problems, from the coming of Mediterraneans in the Epipalaeolithic to the Neolithic (Muge, Asturian and other cultures), followed by the coming of Bronze Age men to the spread of the Megalithic concept.

The Celtic settlement in Portugal from Central Europe is put by some at 900 B.C. but others, perhaps more realistically, consider that the first Aryan settlers coming in as early as 1000 B.C. were pre-Celtic Bronze Age Indo-Europeans. Ultimately, however, the iron-using Goidelic Celts dominated the others by the time of the 7th century B.C.

The part played by the Swabians in the creation of the Portuguese people was considerable. It is interesting to note that while they are classified as Germanic as they certainly were, the scattered nature of their settlements, and certain matriarchal aspects of their religion—thus they had an important deity in the Earth Goddess in their Germanic location—suggest an underlay of Celtic, or even pre-Celtic culture, and perhaps even of ethnology.

It is usual in these days to think of peoples as dominated by their environment, but the location of the Visigoths on the Meseta of Central Iberia is a case of a people whose culture was markedly pastoral—for they came from Eastern Europe originally—and who as a consequence decided consciously to settle in the type of geographical region suited to their own culture and way of life, despite the fact that it was the part of the peninsula which had been avoided by other settlers (of an agricultural way of life) from the earliest times. In the same way the Swabian settlement in the north-west of the peninsula was a choice of a region as near the home climatic and geographical conditions as possible, while the failure of the Moors in the end to dominate Iberia was because they never made any serious attempt to subjugate thoroughly and effectively such regions as the north-west which held no attraction for them—because they were too cold and wet. They preferred regions of scarce water supply, where irrigation was necessary, with all that involves in the way of labour!

This book is particularly valuable as it makes available the gist of many Portuguese scholars' points of view on matters of prehistory and history which are not normally easily accessible to those who do not read the language.

A CENTURY OF DARWIN

Edited by S. A. Barnett. Pp. 376, 5 Plates, 55 Text Figures. Heinemann, London, 1959. Price 30s.

This book contains a series of essays by many who are distinguished scholars. C. H. Waddington has produced an excellent summary of the *Theories of Evolution*, and very properly dismissed Lamarckism as untenable. It is curious that while this theory is entirely exploded, so much of popular thinking, in the fields of sociology and politics in particular, is in a greater or lesser measure based upon it. Thedosius Dobzansky in writing on *Species after Darwin* goes out of his way to say that there are no pure races, and no two individuals are likely to have the same genes. This is, of course, a complete distortion of what is meant by pure race. No one has ever argued when talking of pure races that all individuals, down to their most minor characters, had exactly

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the same genetic structure—for if so, except so far as there might be some variation produced by environmental conditions, all persons would be absolutely identical—and no one has ever said they were. By pure races has been meant, and is still meant, that so far as the most prominent characters are concerned, and particularly those which are the most subject to selection, all of a particular phylogenetic group have anything from an absolute to a relative homogeneity. The enormous lapse of time involved in the evolution of man, and the extreme climatic and other conditions to which he was subjected in that long history have been enough to ensure in the isolation of the great specific groups both a relative uniformity within each group in connection with major characters, and a very great disimilarity from others. Indeed if it were not so it would be extremely surprising, and it would call in question the whole principle of the effect of natural selection. Indeed, since this writer has chosen to speak of the work of other workers as an absurdity we have no hesitation in characterising his reasoning in his own language. The reference to others which he makes is to C. H. Merriam, and his division of the American grizzly bear into seventy-nine species, a "procedure matched for absurdity only by the more recent attempt of R. R. Gates to divide living mankind into four separate species." It is well known that the views of Dobzhansky are not a little tinged by political thinking, which prefers, in order to bolster an essentially so-called "liberal" point of view, to obliterate, apparently by abuse where necessary, any concept which runs counter to the idea that all men belong to one species. Yet, such a view is the least economical that can be propounded. The whole study of palae-anthropology leads inevitably, if we are honest, to the discovery of more than one species; and the outstanding differences of not merely a physical but also a mental nature between the major divisions of mankind support such a view. Inherent antipathy, which more than one anthropologist has noted between different ethnic groups, argues that we are not dealing with just minor variants of the one human race. The repugnance which breaks out in connection with the Colour question is rationally explained on such a basis. Furthermore, it is no use saying that such colour-prejudice is something which is solely socially induced, and can be put right by the kind of brain-washing which is now taking place in all the democratic countries motivated by a mistaken concept of what is ethical, for we find that it is deeply embedded in all living animals. A recent example is Drosophila paulistorum from South America, where it was found by one of Dobzhansky's students that the hybrid females between two sub-species refused to mate with the males of either sub-species or the hybrid (Lee Ehrman, 'A Genetic Constitution Frustrating the Sexual Drive in *Drosophila Paulistorum*,' *Science*, Vol. 131, No. 3410, 6 May 1960, p. 1381). Whatever this shows, it indicates an inherent repugnance developed in Drosophila, which is not without its parallels to those between Black and White, between High Caste (mainly fair-skinned) and Low and Out-caste (mainly dark) Hindus.

If the criteria which Dobzhansky himself has employed for creating species among fruit-flies were applied to man it is likely that the four species formerly suggested by R. Ruggles Gates would prove far too few. In any case it seems past belief that any scientist who has a deep and wide knowledge of anthropology, and is not a mere dilletante giving forth *ex cathedra* judgments in relation to man based upon a reputation established elsewhere, can stigmatize as absurd the suggestion that there

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are human species, and we would have thought that three, four or five would have been nearer the truth than one, having regard to all the facts.

There are useful chapters on *Darwin and Embryology* by Gavin de Beer, and on *The Study of Man's Descent* by Wilfrid le Gros Clark, as well as by other writers, whose work is well worthy of attention, even if in some cases there may be more than one opinion as to the interpretation of the evidence.

R. GAYRE OF GAYRE.

MANKIND IN THE MAKING: THE STORY OF HUMAN EVOLUTION

By William Howells. 1959. Doubleday, New York. Pp. 382.

When Darwin wrote the *Descent of Man* in 1871, the only known human fossils were the Neandertal skeleton and the Naulette jaw (discovered in Belgium). The Gibraltar skull, though found in 1848, was not recognized until long after Darwin's death; and opinions of the skeleton ranged from a Biblical flood victim to a Russian Cossack in pursuit of Napoleon's army! Human fossils have since been found with ever increasing frequency. While throwing much light on human evolution, they generally raise as many questions regarding human phylogeny as they answer. This is the way of science, and yet in the aggregate these discoveries throw an enormous amount of light on the paths taken by human descent, though still subject to many interpretations.

In his latest book, Professor Howells sets forth in the form of a college textbook the known facts regarding human fossils from many parts of the world, combining with speculations as to how the riddle of man's history is to be read. His lively style will be attractive to students; and his matter, which is conversant with the most recent developments, will be worth the attention of every anthropologist. His account (chapter 7) of the discovery of the Australopithecines by Dart, Broom and others shows how far from dryness the study of fossil bones can be.

The last seven chapters, concerned with the races of man, are more controversial, leading to occasional contradictions and sometimes ending in problems to which there is no present answer, e.g., the relations of the African Negroes with the Negritos and the Melanesians of the East. On many such matters agreement will not be expected.

It is pointed out (p. 226) that the sickling gene in Africa is in a balanced condition, heterozygotes being resistant to malaria so that the condition persists as an adaptation in the race; in other words it is a racial character. Its occurrence in parts of Greece and Turkey is generally regarded as the result of early Negro slave crosses. But Lehmann discovered sickling in the Paniyan tribe which lives in a malarial region of S. India. The simplest interpretation is that this originated, as in Africa, through an independent mutation which is clearly adaptive in malarial regions.

There are reasons for considering the Pygmies of Africa, with their mahogany skin colour, older than the Negro, whose relatively recent origin Howells emphasizes. There are also abundnant reasons for regarding their dwarfness as the result of a single gene mutation.

Everyone wishing a recent racy account of the latest developments regarding human phylogeny should read this book, even though they will not agree with all the views expressed.

R. R. G.

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SPLOSNA ANTROPOLOGIJA

By Professor Dr Bozo Skerlj, Ljubljana, 1959.

This is a completely comprehensive work written in Slovenian. It deals with the bio-anthropology of man, and it traces the development of the human form from the earliest stages, dealing with man in the orders of classification, from order, sub-order, infra-order, to family, sub-family and ultimately to genus, into which category the races of man are placed. The development of man is also related to geological time, and particularly to the four systems of ice advance in the Northern Hemisphere of Günz, Mindel, Riss, and Würm. The problem of evolution is dealt with at some length, and Professor Skerlj derives the Neanderthalers from a pithecanthropic origin, parallel to which would come the Steinheim and Palestine Neanderthal types. These latter he would consider some mixture of Homo Sapiens, while some of their blood has passed into some of the sections of Homo Sapiens also. There is a useful table at pages 44 and 45 relating the geological periods to the various racial types which have been discovered in those periods, and in which table he also indicates, for example, the Swanscombe skull as a hybrid between Homo Pithecanthropus and Homo, that is between Neanderthal and European Homo Sapiens. There is an interesting account of various racial types from the Polynesians, of quite European characteristics, to the Pygmies, Bushmen, Greenland Eskimoes, Lapps, Ainu, Bantu, Nilotic Nuers and so forth. He also deals with the relationship of body form, such as leptosomatic and evrisomatic to racial classification. There is a whole section dealing with anthropological method and instruments, as well as useful formulae.

It is a great pity that this work is written in Slovenian and not produced in English, when it would be of very considerably greater value. Let us hope that an English edition will be produced before long.

Peoples of the World Series—

THE BUSHMEN OF SOUTH AFRICA, by Agnes Jackson

THE CATTLE PEOPLE OF NIGERIA, by A. H. M. Kirk-Greene and Caroline Sassoon

THE MASAI OF EAST AFRICA, by Jill Waldock

THE SHERPAS OF NEPAL, by Jennifer Bourdillon and Victor Coverley-Price

THE MAORIS OF NEW ZEALAND, by Roderick Finlayson and Joan Smith

Oxford Press. Price 2s each.

This series of small books is prepared, obviously, for children, and as an introduction to simple ethnography and ethnology. Each booklet is illustrated with maps, diagrams, and drawings of the people and the habitats. For instance in the case of the Bushmen booklet it explains clearly how Bushmen occupied much of South Africa and were driven towards the Kalahari by the advancing Bantu, who are, as is well known, relatively newcomers in South Africa. As a result of the Bantu advance the hunting ground of the Bushmen has been largely restricted. The rock paintings of the Bushmen are clearly described, and their ethnological sense is illustrated by the reference to the fact that they coloured them-

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selves on such paintings with brown colouring while they indicate the Bantu with black.

The Masai, like the Bushmen, are a lighter people in colouring than the African generally, and they have not such woolley hair. They have fine noses, slightly slanting eyes, and their general appearance would suggest Hamitic blood. The author, however, is going a little too far in suggesting that they must look very much like what the Ancient Egyptians must have done in the days of the Pharaohs.

The Tibetan origin of the Sherpas is dealt with in the booklet on that subject, and a good account is given of the people.

Atogether this is quite a good series as an introduction to the subject.

MEXICO

By Erico Verissimo. Macdonald, London. Pp. 360, 24 Photographic Plates. Price 30s.

This is a traveller's account of Mexico, and so to be read more for enjoyment than for information on the current or past ethnology of the country. Yet any acute observer must provide information of anthropological interest, and there are many passages in this book of that nature. The reaction of the Mexican Indian passengers to their train's derailment shows the dull stoicism of the Amerind, and a relationship much nearer to Mongoloid character than either Caucasoid or Melanoid, despite their very considerable acculturation to Spanish modes of life and religious thought—and serves to show the tremendous importance of heredity, which is now so frequently ignored or minimised.

The really bloody history of Mexico is also surely not surprising when one realises that the Empire of the Aztecs before the European conquest was of the bloodiest—with its human sacrifices of prisoners of war, even to the practice of cannibalism, by eating the sacrificed. The Indian has been Christianised, but he is still the descendant of the Aztecs, and the Mexican is probably more Indian than Spaniard. In the light of heredity Mexican history is explicable.

The writer estimates that the Mexicans are 30% Indian, 10% European, and 60% Mestizos—on which basis one may conclude that these latter are likely to be more Amerind than Caucasoid. In the light of this, and having regard to heredity, the writer's conclusion is not surprising when he writes: "I have the impression, therefore, that in Mexico the Mestizo has solved his problem in a great part by means of a reconciliation with his Indian past." The writer is no doubt also right when he sees in the mistrust of the Mexican an Amerind inheritance.

The paucity of gestures, in a people reared in a Latin civilization, is explicable on the same Amerind basis—for the Indian has few if any.

There is much in such serious even if popular books of this nature for the racial historian to consider. The chapter on Aspects of Mexican Life and Character is particularly valuable in this connection.

NEW BIOLOGY, No. 31

Edited by G. M. L. Johnson, M. Abercrombie, G. E. Fogg. Pp. 153. Penguin. Harmondsworth, Middlesex. Price 2s d.

An article by Michael Abercrombie, An Introduction to Replication, is of interest, as it shows that environmentally induced deviations from

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exact copying in the nature of cellular changes are relatively transient. Here, in this field, of any, the evidence for Lamarckism should be abundantly evident, and it is not.

Among the papers are The Control of Protein Synthesis by J. Brachet; The Structure and Replication of DNA by N. D. Symonds; Developments in the Theory of Self-Replication by L. S. Penrose; Replication in Bacteria and Viruses by Kenneth Burton; Replication during Embryogenesis by D. R. Newth; Antibody Formation by J. H. Humphrey; Paramecium and the Problem of Differentiation by G. H. Beale; Biological Replication Considered in the General Context of Scientific Illusion by N. W. Pirie; Some Recent Biological Books.

THE PREHISTORY OF SOUTHERN AFRICA

By J. Desmond Clark. A Pelican Book. Published by Penguin. Harmondsworth, Middlesex, 1959. Pp. 341, 16 Plates. Price 6s.

THE STONE AGE OF NORTHERN AFRICA

By C. B. M. McBurney. A Pelican Book. Published by Penguin. Harmondsworth, Middlesex, 1960. Pp. 288, 24 Plates. Price 6s.

These are two very worth-while books to have on the bookshelf: as between them they give a comprehensive and valuable review of the information to date concerning the prehistory of Africa. Whatever may be one's own conclusions on points of theory which these two quite competent writers may make from time to time the amount of information they give well-justifies their work.

One is a little disturbed by Professor Mallowan's statement in the foreword to the first work that unawareness of technological achievements from the Levant and Western Asia is enough to disprove their influence in cave paintings of southern Africa. After all we have evidence of cave paintings depicting what are assumed to be shipwrecked European women with Bushmen without the latter showing in those localities any evidence of techniques from the contact, while, on the other hand, the resultant miscegenation has been detected in later generations as probably due to such sources of chance contact. Such a statement does not solve the problem of the cave painting of Brandenburg depicting the "White Lady." The hair is evidently long, and in no sense Negroid or Bushman-like, and the features are European, quite apart from the fact that she is depicted white. The Abbé Breuil may not be correct in his derivation of this "White Lady" from ancient Crete, but some explanation seems necessary.

THE ETHIOPIANS: AN INTRODUCTION TO COUNTRY AND PEOPLE

By Edward Ullendorff. Oxford Press, London, 1960. Pp. 232, Map, 16 Plates. Price 30s.

Professor Ullendorff is a competent research worker and writer upon Semitic matters, and not less so when it comes to the question of Ethiopian studies, and therefore this will be quite a valuable book for those who wish to have an acquaintance with the history, languages, and linguistic divisions of Ethiopia, as well as with Ethiopian literature. It is particularly good as regards its explanation of the views and teachings of the Ethiopian Church, and the diverse elements from Semitic, Judaic,

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and Cushite sources upon which Abyssinian Christianity has drawn. There are also interesting sections dealing with the life of the people.

It is, therefore, unfortunate that this book is spoilt by an incompleteness which could so easily have been remedied, and which it is hoped will be remedied in any future work, or new edition of this book, by the author.

The title would lead us to believe that the book was about the Ethiopians, but there is no anthropological or ethnological introduction to the study of this nation, and this is something which is absolutely fundamental. For instance, even the degree of pigment, in the various parts of the country, associated with varying tribes, and between the pagans, of non-Hamitic origin, Hamitic Cushites and Semito-Cushite Abyssinians of the dominant elements of the country, are not mentioned—so that in fact the book does not act as an introduction to the people at all. We are well aware that the prevailing mood is to eschew any mention of race and racial differences—but that, for all that, is not excusable in a scholarly work, even if it is in the Yellow Press. This book, therefore, requires the addition of a clear anthropological introduction, and to that we suggest there should be added a chapter on the regional geography supported by a really good map, or a series of maps, so that the racial, and the later tribal, distributions can be understood in the light of it.

Otherwise this is a good book—but we hope that Professor Ullendorff will note these needs, which if added to his book will make it one of much greater service, and provide a standard introduction to the country in which he is so interested.

ESKIMO

By Edmund Carpenter, Frederick Varley and Robert Flaherty. Oxford University Press (University of Toronto Press, 1959, Toronto). Price 40s.

This is a composite work, composed of the sketches of Frederick Varley made in 1938, the Robert Flaherty collection of Eskimo carvings, and the text of Edmund Carpenter, who has lived for long periods in the Arctic, making anthropological studies of the Eskimo.

As the publishers inform us the text is concerned with "Eskimo space concepts as evidenced in their uncanny orientation in travel over ice wastes and sea. . . . It is argued that their primary spatial models are not visual, as with Western man, but acoustic, and that among them space is defined by the ear more than the eye."

The acuteness of observation of the Eskimo is commented upon, as is also his mechanical ability—but neither of these is surprising, since the whole life on the Ice Face of the Northern Hemisphere has caused a selection to run in the direction which must result in these qualities being highly developed.

The book consists of excellent drawings of Eskimo life and habitat, accompanied by reproductions of paintings, and, in addition, reproductions of Eskimo carving.

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